INTERNATIONAL TECHNOLOGY CORPORATION

Project No. 768209
September 1996

Work Plan

Westbank Asbestos Abatement
New Orleans, Louisiana

Contract No. DACW45-94-D-0054
Delivery Order No. 0029

Prepared for:
U.S. Army Corps of Engineers
Omaha District
Fort Crook Area
Offutt Air Force Base, Nebraska 68113

Prepared by:
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RESPONSIVE TO THE NEEDS OF ENVIRONMENTAL MANAGEMENT

WORK PLAN
WESTBANK ASBESTOS CONTAINING MATERIAL REMOVAL AND DISPOSAL PROJECT
NEW ORLEANS, LOUISIANA

CONTRACT NO. DACW45-94-D-0054
DELIVERY ORDER NO. 29
IT PROJECT NO. 768209

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PREPARED FOR:

U.S. ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
FORT CROOK AREA
OFFUTT AFB, NEBRASKA 68113

SEPTEMBER 1996

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1.0 Introduction

The following Work Plan has been prepared by IT Corporation (IT) for the U.S. Army Corps of Engineers (USACE), Omaha District, in compliance with Rapid Response Contract No. DACW45-94-D-0054, Delivery Order No. 29. This work plan describes the activities required to perform asbestos removal activities at over 600 sites in the Westbank area of New Orleans.

1.1 Background

The Westbank asbestos site is located in the Westbank area of New Orleans, consisting of the Jefferson Parish communities of Bridge City, Westwego, Marrero, Harvey, and Gretna and the Orleans Parish community of Algiers. Asbestos-containing material (ACM) has been found in residential yards and other high access areas such as schools and day care facilities. The ACM is found mainly in driveways, walkways, rights-of-ways, and playgrounds. The material is estimated to consist of approximately 43 percent asbestos, chrysotile, and crocidolite.

The source of the ACM has been determined to be from the John-Manville plant that operated in Marrero from 1929 to 1975. They manufactured various asbestos-containing products which produced an aggregate by-product. The aggregate by-product was pulverized and mixed with a filler such as gypsum, dolomite, or calcite. This asbestos-containing aggregate/filler formed a concrete-like material when mixed with water. This material was offered to the public free of charge.

The Louisiana Department of Environmental Quality (LDEQ) began investigation at the site in January 1990. The U.S. Environmental Protection Agency (USEPA) conducted a site assessment in March 1990 and found levels below detection limits for air pathways. The USEPA also conducted a Preliminary Assessment and Site Inspection which resulted in a decision not to pursue further federal action under Superfund at that time.

Recent visits to the site at the request of LDEQ have identified deterioration of the ACM such that much of it is friable. This deterioration greatly increases the potential for release of the asbestos from the ACM and raises significant concerns for human health.

1.2 Site Conditions

The site of concern includes mainly residential and community areas around the Westbank area. The material has been estimated to be present at over 600 locations and averages approximately 4 inches thick in depth. The number of sites identified is expected to increase as the project evolves. The identified sites and the estimated areas and volumes of each are presented in Table 1.

The ACM material is located mainly in the driveways, walkways, and yards of the residential and school areas. In some cases, the ACM extends beneath the houses and into garages. The ACM at each location is accessible in most cases.

1.3 Objectives

The objective of this Rapid Response action is to remove all visible ACM from each site, properly dispose of the material, and to restore the site to an acceptable condition for its intended use. The main activities of the project include the following:

- Mobilization and setup of the command site to prepare for remedial activities.
- Excavation and packaging of all visible ACM at each individual site.
- Completion of the required paperwork to obtain an Asbestos Disposal Verification Form (ADVF) for each site.
- Transportation of the generated ACM to the Jefferson Parish landfill for disposal.
- Restoration of each site to an acceptable condition for its intended use.
- Development of a final project report which details the activities performed and actions taken.

All site activities will be conducted in accordance with the USACE Scope of Services dated July 25, this work plan including the attached Site Safety and Health Plan (SSHP), and the proposed subcontractors' work plans and health and safety plans.

2.0 Project Activities

The proposed project activities for this ACM removal action include the following:

- Site Visit/Pre-Bid Meetings
- Work Plan preparation
- Public Meetings
- Mobilization/Demobilization
- Site Preparation for Command Post
- Removal of ACM Material
- Disposal of ACM Material
- Backfill and Restoration
- Air Monitoring and Analysis
- Site Administration and Indirects
- Site Teardown
- Project Support
- Final Project Report
- Project Closeout.

2.1 Site Visit/Pre-Bid Meeting

On July 11, 1996, representatives of the USEPA, the USEPA START team, USACE, and IT met in New Orleans to view the site and to discuss the project requirements. The background of the project was discussed and approximately 10 sites were visited to assess the project scope.

On August 15 and 16, 1996, pre-bid meetings were conducted at the Holiday Inn in Gretna, Louisiana. Potential local subcontractors for the ACM removal and restoration portion of the project were invited to discuss the project requirements. The scope of work for each task was discussed and questions were answered regarding the intended work. After the meeting, several sites were visited to permit the potential subcontractors to view representative areas to be addressed during the project.

2.2 Work Plan Preparation

This Work Plan has been prepared based on the pre-delivery order notice, the site visit, the scope of services, and various other site-specific data and discussions as required by the Delivery Order.

The Work Plan describes in detail how the project will be performed and how the objectives will be accomplished. The plan will also discuss the project organization, the various reporting requirements, and provide a schedule for the performance of the work.

As part of the Work Plan preparation, a SSHP and Air Monitoring Quality Control Plan (AMQCP) have been developed which address specific guidelines for the health and safety and air monitoring aspects of the project. The SSHP and AMQCP are included as Appendix A of this document.

The subcontractors selected to perform the ACM removal and the restoration work have also prepared work plans and health and safety plans for this project. These plans are included in Appendices B, C, D, and E of this document.

The Work Plan will be submitted to the USACE for review and final approval prior to any site activities commencing.

2.3 Public Meetings

Prior to the commencement of the project, the IT project manager will attend two meetings held to inform the general public about the project. These meetings will be open to the public and will provide the details of the project and the points of contact. The USEPA will provide the lead role in these meetings, with the USACE and IT providing the technical support. If required, the selected IT site manager will be available to attend these meetings.

2.4 Mobilization/Demobilization

The project field crew will consist of the following personnel from the corresponding locations:

- Pittsburgh, Pennsylvania
  - Project Manager
  - Cost Administrators
  - Field Administrator

- New Orleans/Slidell Area
  - Site Manager
  - Foreman/Quality Assurance/Quality Control/Health and Safety

The travel time between Pittsburgh and New Orleans has been estimated to be six hours, and the local personnel have been allotted one hour travel time per day to the site.

The proposed subcontractors are local to the project and will mobilize as required on the date requested. Any heavy equipment required will be rented from local vendors within close proximity to the site. Small tools and low value equipment required will be obtained from IT's Minden, Louisiana yard.

As part of the mobilization, the field staff as well as the subcontractor will be given a brief overview of the site conditions and the requirements of the SSHP.

2.5 Site Setup and Command Post Preparation

Prior to work beginning on the project, a centrally located command post will be established in the field adjacent to the state of Louisiana office building at 2150 Westbank Expressway. The command post will be the location for the administrative activities to be conducted during the project. The site will also include a trailer for the general public to inquire about the project and to notify the USEPA of any additional sites which may need to be addressed.

The site will be fenced with a standard 8-foot chain-link fence with barbed wire along the top. Two 16-foot vehicle gates will be placed at opposite ends of the site along Scotsdale Drive. One 4-foot man-gate will be placed to allow pedestrian access from the adjacent parking lot. The fence and gate specifications are included in Appendix F.

The site will be covered with a goetextile material and then a well graded locally available stone to support vehicle and equipment traffic. The stone will be spread utilizing a D-4 size bulldozer or equivalent.

Three office trailers will be placed and anchored within the fenced area to be utilized by IT, the USACE, and the USEPA during the project. The first trailer will be approximately 12 feet by 20 feet in size and placed adjacent to the north fenceline to be utilized as the communication trailer for the public. The other two trailers will be approximately 12 feet by 60 feet and 12 feet by 40 feet and will be placed adjacent to each other for the project administrative duties. The preliminary layout of the trailers and the compound are detailed in Figure 1.

The public relations trailer will be equipped with two telephone lines and the other trailers will contain at least four lines. The IT/USACE trailer will include a fax machine, computer equipment, and printers. Each trailer will also be furnished with sufficient office furniture to maintain fully functional office facilities.

The local utility service companies will be contacted to obtain permits and arrange for connections for electric, telephone, and water. The water will be run from the source to a central location to service the three ACM contractors staging area. The water line will be a 2-inch polyvinyl chloride (PVC) line buried at least 2 feet deep and will be installed by a local plumber. Three connection ports will be provided for the subcontractors. The subcontractors will be required to make the connections to these ports and run the water supply as they see necessary for their purposes.

The command post will be equipped with yard lighting and will be patrolled by security personnel during nonworking hours. A radio system will also be installed in the compound to maintain contact between all parties involved in the project.

2.6 ACM Removal

The ACM will be removed from each location by one of three local subcontractors properly licensed to perform this type of work. A Request for Proposal (RFP) was issued to approximately 12 local subcontractors for the performance of this work. Based on the proposals and plans received, and an evaluation by IT and USACE of the qualifications of each, the following subcontractors have been selected to initially perform the removal of the ACM:

- Sub #1 - Quality Environmental Contractors
- Sub #2 - To be determined
- Sub #3 - To be determined.

The exact limitations of the areas to be removed at each site will be identified by the USEPA START Team prior to the start of excavation. The subcontractor is required to remove all visible ACM at each location prior to moving on to the next site. The depth of the ACM is estimated to be 4 to 6 inches thick and in no case will the excavation extend deeper than 1 foot.

The specific procedures to be utilized in the removal of the ACM vary between subcontractors and sites. The anticipated methods of each subcontractor are detailed in their respective work plans, which are included in Appendices B, C, and D of this document.

It is anticipated that the school and day care centers will be addressed first and then the removals will radiate out from there. Each subcontractor will be given sites in close proximity to each other as much as possible to prevent excessive travel between sites.

2.6.1 ACM Subcontractor Oversight

During the course of the ACM removal activities, IT will provide an individual responsible to oversee the work progress of each crew of the subcontractors. This person will act in the role of foreman, quality assurance/quality control (QA/QC) coordinator, and health and safety officer. It is anticipated that each subcontractor will provide a maximum of three crews each. Each foreman will be assigned to a subcontractor to maintain consistency throughout the project.

The foreman will be required to perform the following activities at each site:

- Coordinate with the START team the sites which are ready to be remediated.
- Prepare a site-specific QA report which includes the address of the site, a sketch of the proposed removal area, and other specific information.
- Measure the area to be removed and agree on the square yardage for the site with the subcontractor for payment purposes.
- Oversee the execution of the ACM removal and document the specific activities.
- Observe and enforce the health and safety requirements for the removal activities.
- Photograph the removal site prior to and after removal activities and cross-reference the pictures on the QA report.
- Maintain the project file for each site.
- In conjunction with the USACE on-site representative, approve the site as complete and authorize the subcontractor to move to the next site.

- Periodically complete a subcontractor evaluation form which grades the subcontractor on the quality and efficiency of the work completed.

Each foreman will be equipped in a pick-up truck with a portable radio to maintain contact with the command post and the other foreman.

A copy of the proposed QA form to be completed at each site and the subcontractor evaluation form is include in Appendix G of this document.

2.6.2 Daily Coordination Meetings

At the completion of each day's activities, a meeting will be held at the command post which will be mandatory for all subcontractors to attend. This meeting will review the day's activities to document the progress of the ACM removal, discuss health and safety issues and concerns, and lay out the next day's proposed sites to be addressed.

The site manager will conduct the meeting and all attendees will be encouraged to provide input. The meetings will be of sufficient length to address all pertinent issues, but should be relatively brief as the project progresses.

2.7 Disposal of ACM

The ACM material removed from each site will be transported by the respective subcontractor to the Jefferson Parish landfill. The subcontractor is responsible to coordinate the transportation and delivery of the waste to the landfill during normal business hours. The address and contact for the landfill is as follows:

Waste Management of Louisiana
Jefferson Parish Landfill
5800 Highway 90W
Avondale, Louisiana 70094

Contact: Mr. Ben Twiner (504) 436-0152

Jefferson Parish will invoice IT directly for the ACM disposal and will provide documentation of each load transported to the facility.

2.8 Backfill and Restoration

After the completion of ACM removal activities at each site, restoration of the affected areas will commence immediately. A local subcontractor will be selected to perform the restoration activities including driveway and walkway replacement, backfill of yard and open areas, and placement of sod.

A RFP was sent to approximately nine local vendors to perform the restoration activities for this project. From the proposals received and an evaluation of qualifications of the subcontractors, the following companies were selected to perform the restoration at each site:

- Sub #1 - Nola Construction
- Sub #2 - To be determined.

The areas to restored will be completed as soon as the ACM material is removed and the site has been cleared for restoration. The specific methods for replacement of the driveways, walkways, servitudes, and open areas are included in the work plans of the selected subcontractors, which are included in Appendix E of this document.

2.8.1 Driveway Replacement

The majority of sites throughout project area involve the removal of ACM from the driveways of homes. Once the ACM is removed, the driveways will be replaced using a crushed concrete (or limestone) base material. The material will be placed and graded using conventional methods, taking care to grade to allow for proper drainage. The driveway will be compacted with at least 3 passes with a vibratory compactor, or to a point where no pumping of the base is observed.

Prior to placement of the rock within the driveway, a plastic landscape edging will be installed to delineate and separate the driveway from the adjacent soils.

2.8.2 Walkway Replacement

Any walkway removed during the project will be replaced in a similar manner as the driveway replacement. The plastic edging will be installed and the crushed concrete placed, graded, and compacted to match the surrounding grades. Again, emphasis will be directed to preventing ponding of water adjacent to any new walkways.

2.8.3 Servitude Replacement

The areas within the servitudes where ACM has been removed will be replaced with like material which is adjacent to the area of removal. This may include crushed concrete or topsoil and sod. The servitude areas are critical to the drainage of the street and proper grading of the areas will be performed during the restoration process.

2.8.4 Yards or Open Area Restoration

Any areas disturbed within the yards or open areas of the sites will be backfilled with locally obtained topsoil and graded for proper drainage. Extreme care will be taken to match the surrounding contours and to prevent any ponding of water. The edges of the affected area will be kept at least 2 inches below the adjacent grass to allow for the thickness of the new sod.

2.8.5 Sod Replacement

The yard areas or existing grass areas disturbed during the work will be sodded with a locally obtained St. Augustine sod. The sod will be placed in an orderly and neat manner and trimmed to provide a smooth transition to the adjacent grass. The sod will be watered and maintained by the subcontractor for a period of 60 days from the date of placement.

2.9 Air Monitoring and Analysis

During ACM removal activities, each subcontractor will be responsible for the collection of personal air monitoring samples. These samples will be required to be collected from a minimum of 25 percent of the workers present per crew. The cartridges are to be turned over to IT at the end of each work shift. IT will then turn the samples over to the START team for processing.

The methods and procedures for collection and processing of these samples is detailed in Section 8.0 of the SSHP, Appendix A of this document.

2.10 Command Post Teardown and Demobilization

At the completion of the site activities, the command post area will be torn down and restored to its previous condition. The trailers will be dismantled and returned to their respective vendors. The fence surrounding the site will be removed and all post holes filled. All equipment will be returned and the subcontractors will clean up any excess debris created by their work. The rock base material will be pushed up, loaded on trucks, and hauled off site. The site will be graded to

allow for proper drainage and seeded by a local subcontractor using a locally compatible seed mixture. The light poles will be removed and all utilities will be disconnected.

2.11 Health and Safety Requirements

All site activities will be conducted in strict accordance with the SSHP, which is included as Appendix A of this document. In addition, the health and safety plans of the selected subcontractors will be strictly enforced during the project. These plans are include in Appendices B, C, and D.

2.12 Submittals and Reports

2.12.1 Daily Reports

The contractor will provide the USACE with the required daily reports during site activities. These include the Rapid Response Daily Work Order and the Rapid Response Quality Control Daily Report. Blank copies of these reports are included in Appendix G of this document. These reports will be submitted to the USACE on-site representative at the close of business daily.

2.12.2 Weekly Reports

Weekly reports, including current cost expenditures, will be distributed per the submittal register detailed in the scope of services. These reports will summarize the activities conducted on the site for the week, as well as the total cost spent to date on the project. Discussion will also be included for any cost or scope variances which may have been encountered. Blank copies of these reports are included in Appendix G. All review comments of plans and field operations by the CIH, health and safety supervisors, foreman, site superintendent, and office management shall be attached to the reports.

2.12.3 Daily RapidDay™ Cost Reports

The morning after the previous day's activities, the IT cost administrator will prepare a RapidDay™ cost report for the previous day's expenditures and the estimated cost required to complete the project. These reports will be presented to the USACE on-site representative in a timely manner for review and approval.

During any period where the work is idle or incomplete, the IT cost administrator will prepare RapidDay™ reports on a weekly basis. These reports will be reviewed by the IT project manager

and forwarded to the USACE on-site representative or project engineer for review/comment and signature. The cost administrator will prepare weekly reports until the draft final report is submitted.

2.12.4 Final Project Report

At the completion of site activities, a report will be prepared by the contractor which summarizes the site activities and results. This report will include the site conditions encountered, the work performed, problems encountered during ACM removal and restoration activities, and a summarization of the air monitoring analytical results. The report will also include all field documentation, individual site QA reports, ADVF forms, certificates of analysis, photographs, permits, and any other pertinent information. This information shall be tabulated by site.

The final report will be submitted in draft format for the USACE to review prior to final submission. These shall be forwarded to:

U.S. Army Corps of Engineers
CEMRO-CD-FC (Hobza)
Bldg. 525, Castle Hall, 3rd Floor
Offutt AFB, NE 68113

Upon receipt of comments, the final report will be revised and resubmitted.

3.0 Management and Staff

A project team, based in IT's Pittsburgh, Pennsylvania office, has been selected for this project to assure technical and efficient execution.

The program manager for this delivery order will be Mr. Al Meyers, who will ensure that contractual obligations will be met. The project manager will be Mr. Tom Mathison, who will oversee the coordination of the entire project and administer instructions and obtain answers to questions from the USACE project manager. The IT project manager will be available to be on site as required during the execution of this project.

Mr. Warren Houseman will serve as the health and safety officer. Mr. Houseman will develop a health and safety plan and oversee its implementation.

The anticipated field staff will include the following:

- Site Manager - Duties to include the overall site management of the project, coordination between subcontractors, interface with USACE and USEPA, and responsibility for the daily submittals required.

- Foreman/QA/QC/Health and Safety - The foreman will be responsible for the oversight of the asbestos removal and restoration subcontractors, including the calculation and confirmation of quantities for payment, health and safety oversight, documentation of the work completed at each site, and scheduling.

- Cost Administrator - Duties include the tracking and reporting of all project-related costs utilizing RapidDay™ Plus computer program.

An organization chart for this project is included as Figure 2. Resumes of key personnel for this project are included in Appendix H.

4.0 Project Schedule

The anticipated schedule for the completion of the asbestos removal activities at the estimated 600 locations is detailed in Figure 3. Due to the quantity and variation of sites to be addressed during this project, the schedule will be continually updated during the project.

TABLES

TABLE 1

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER		AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
1		300				300	5.56
2		288				288	5.33
3		150				150	2.78
4		75				75	1.39
5		500				500	9.26
6		144				144	2.67
7		600				600	11.11
8		88				88	1.63
9		400				400	7.41
10		1092				1092	20.22
11		100				100	1.85
12		868				868	16.07
13		720				720	13.33
14		1800				1800	33.33
15		960				960	17.78
16		960				960	17.78
17		4				4	0.07
18		880				880	16.30
19		150				150	2.78
20		40				40	0.74
21		152				152	2.81
22		944				944	17.48
23		944				944	17.48
24		675	120			795	14.72
25		40	0			40	0.74
26		855	54			909	16.83
27		92				92	1.70
28		210				210	3.89
29		126				126	2.33
30		225				225	4.17
31		160	80			240	4.44
32			96			96	1.78
33			72			72	1.33
34		528	154			682	12.63
35		832	0			832	15.41
36		160				160	2.96
37		384				384	7.11
38		600				600	11.11
39		600				600	11.11
40		200				200	3.70
41		140				140	2.59
42		588				588	10.89
43		800				800	14.81
44		240				240	4.44
45		120				120	2.22
46		320				320	5.93
47		444	64	16		524	9.70
48		160				160	2.96
49		688	80			768	14.22
50		68				68	1.26
51		24			376	400	7.41
52		160				160	2.96
53		160				160	2.96
54		2200				2200	40.74
55		550				550	10.19
56			260			260	4.81
57		400				400	7.41
58		456				456	8.44
59	•	240				240	4.44
60	•	531			261	792	14.67
61		320				320	5.93
62		500			160	660	12.22
63		336		90	180	606	11.22
64		SEE #63				0	0.00
65	•	200				200	3.70
66		160				160	2.96
67		1495				1495	27.69
68		640				640	11.85
69		600				600	11.11
70	•				165	165	3.06
71		60				60	1.11
72	•	400				400	7.41
73		105				105	1.94

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER		AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
74		1716			792	2508	46.44
75					297	297	5.50
76		72				72	1.33
77	•	640				640	11.85
78	•				960	960	17.78
79			890			890	16.48
80		279	441			720	13.33
81		100				100	1.85
82		120				120	2.22
83	•	270				270	5.00
84					560	560	10.37
85		48				48	0.89
86		630				630	11.67
87		575				575	10.65
88	•		696			696	12.89
89		620			252	872	16.15
90		1488	70		456	2014	37.30
91		63				63	1.17
92		216				216	4.00
93		364				364	6.74
94		230		120	72	422	7.81
95		689			159	848	15.70
96		266				266	4.93
97			250			250	4.63
98			SEE #97			0	0.00
99		552				552	10.22
100		405				405	7.50
101		91				91	1.69
102		390				390	7.22
103		675				675	12.50
104		640				640	11.85
105		147				147	2.72
106		352				352	6.52
107		656				656	12.15
108		1290	234		1363	2887	53.46
109		460	270		880	1610	29.81
110		160				160	2.96
111			96			96	1.78
112			80			80	1.48
113			135			135	2.50
114	•		450			450	8.33
115		1843				1843	34.13
116		330	108			438	8.11
117			288			288	5.33
118			297			297	5.50
119		28	99		80	207	3.83
120		120				120	2.22
121			360			360	6.67
122		3864				3864	71.56
123		960				960	17.78
124		150				150	2.78
125			630			630	11.67
126		220				220	4.07
127		1400				1400	25.93
128		876				876	16.22
129		720				720	13.33
130		80	154			234	4.33
131		240				240	4.44
132		208				208	3.85
133		120	60			180	3.33
134		150	150.5			300.5	5.56
135				200		200	3.70
136		120				120	2.22
137		680				680	12.59
138			125		43	168	3.11
139				24	168	192	3.56
140		301				301	5.57
141					120	120	2.22
142		240				240	4.44
143		56				56	1.04
144		1927				1927	35.69
145		112				112	2.07
146		180				180	3.33

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER		AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
147		720				720	13.33
148		1044				1044	19.33
149	•	240				240	4.44
150	•	120				120	2.22
151	•	448				448	8.30
152			60			60	1.11
153		85				85	1.57
154		880			704	1584	29.33
155		616			630	1246	23.07
156		616			494	1110	20.56
157					340	340	6.30
158			312			312	5.78
159		2187				2187	40.50
160		1536				1536	28.44
161	•		20			20	0.37
162		160				160	2.96
163		983	351			1334	24.70
164		120				120	2.22
165		64				64	1.19
166		1388				1388	25.70
167		630				630	11.67
168		90				90	1.67
169		357				357	6.61
170		144	108			252	4.67
171		560				560	10.37
172		376			80	456	8.44
173		512				512	9.48
174		600				600	11.11
175		32,250				32250	597.22
176		768				768	14.22
177		360				360	6.67
178		448				448	8.30
179		832				832	15.41
180		90				90	1.67
181			288			288	5.33
182		40				40	0.74
183		400				400	7.41
184		160				160	2.96
185		375				375	6.94
186		560				560	10.37
187		372				372	6.89
188		80				80	1.48
189		320		64		384	7.11
190		480		20		500	9.26
191					48	48	0.89
192		400				400	7.41
193		200				200	3.70
194		200				200	3.70
195		400	100			500	9.26
196		3				3	0.06
197		250				250	4.63
198		800				800	14.81
199		2196				2196	40.67
200		560				560	10.37
201		675				675	12.50
202		256				256	4.74
203		500				500	9.26
204				70		70	1.30
205		ED ACM–ACTUAL VOLUME ESTIMATED			1600	1600	29.63
206		500				500	9.26
207	•	588				588	10.89
208		3				3	0.06
209		740				740	13.70
210		1044			378	1422	26.33
211				22	378	400	7.41
212		72		16		88	1.63
213		320				320	5.93
214		120				120	2.22
215		64				64	1.19
216		512	200			712	13.19
217	•	14				14	0.26
218		512				512	9.48
219		560				560	10.37

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER	AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
220	768				768	14.22
221	120				120	2.22
222	288				288	5.33
223	480				480	8.89
224	504				504	9.33
225	605				605	11.20
226	512				512	9.48
227	320				320	5.93
228	160				160	2.96
229	240				240	4.44
230	48				48	0.89
231	192				192	3.56
232	192				192	3.56
233	400				400	7.41
234	531			100	631	11.69
235	128				128	2.37
236	450				450	8.33
237	560				560	10.37
238	84				84	1.56
239	120				120	2.22
240	240				240	4.44
241		96			96	1.78
242		378			378	7.00
243	768				768	14.22
244	288				288	5.33
245	450				450	8.33
246	128				128	2.37
247	1000				1000	18.52
248	132	10			142	2.63
249	400				400	7.41
250	1200				1200	22.22
251	75				75	1.39
252	1027				1027	19.02
253	380				380	7.04
254	600				600	11.11
255	820				820	15.19
256	128				128	2.37
257	550				550	10.19
258	310				310	5.74
259	400				400	7.41
260	500				500	9.26
261	240		319		559	10.35
262	288			288	576	10.67
263	240				240	4.44
264	200				200	3.70
265	420		36		456	8.44
266	985				985	18.24
267	320				320	5.93
268	100				100	1.85
269	300				300	5.56
270	24				24	0.44
271	768				768	14.22
272	240				240	4.44
273	486				486	9.00
274	504				504	9.33
275	576				576	10.67
276	960				960	17.78
277	560				560	10.37
278	720				720	13.33
279	720				720	13.33
280	960				960	17.78
281	1060				1060	19.63
282	672				672	12.44
283				36	36	0.67
284	731				731	13.54
285	576				576	10.67
286	720				720	13.33
287	672				672	12.44
288	800				800	14.81
289	424				424	7.85
290	1300				1300	24.07
291	640				640	11.85
292	300				300	5.56

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER		AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
293		800			360	1160	21.48
294		412				412	7.63
295		412				412	7.63
296		704				704	13.04
297		1512				1512	28.00
298		528				528	9.78
299		216				216	4.00
300		280				280	5.19
301		490				490	9.07
302		112				112	2.07
303		900		100		1000	18.52
304		247.5			18	265.5	4.92
305				66	304	370	6.85
306		120				120	2.22
307		160				160	2.96
308		285			1379	1664	30.81
309		285			1219	1504	27.85
310					374	374	6.93
311		800				800	14.81
312		65				65	1.20
313		360				360	6.67
314					3285	3285	60.83
315		300				300	5.56
316		400				400	7.41
317		240				240	4.44
318					288	288	5.33
319		360				360	6.67
320					8	8	0.15
321		405				405	7.50
322		40				40	0.74
323		320			900	1220	22.59
324		600				600	11.11
325			48			48	0.89
326		640				640	11.85
327		800				800	14.81
328		800			150	950	17.59
329		984				984	18.22
330		360				360	6.67
331					20	20	0.37
332		960				960	17.78
333		960				960	17.78
334		30		105		135	2.50
335		300				300	5.56
336	•	1200				1200	22.22
337		800			700	1500	27.78
338	•	540				540	10.00
339		1080				1080	20.00
340		84				84	1.56
341					234	234	4.33
342		180				180	3.33
343	•	8				8	0.15
344		72				72	1.33
345		384				384	7.11
346		400				400	7.41
347		128				128	2.37
348		336				336	6.22
349		180				180	3.33
350		8				8	0.15
351	•	300				300	5.56
352		96				96	1.78
353		320				320	5.93
354		1511				1511	27.98
355		SEE #354				0	0.00
356	•	216				216	4.00
357		360				360	6.67
358		600				600	11.11
359		2050				2050	37.96
360		248				248	4.59
361	•	250				250	4.63
362		120				120	2.22
363		2214			126	2340	43.33
364		1190				1190	22.04
365		656				656	12.15

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER		AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
366		900				900	16.67
367		1792				1792	33.19
368		1792				1792	33.19
369		1125				1125	20.83
370	•	720				720	13.33
371		784				784	14.52
372	•	1014				1014	18.78
373	•	1584				1584	29.33
374		150				150	2.78
375		120				120	2.22
376		477				477	8.83
377		304				304	5.63
378		1				1	0.02
379		657				657	12.17
380		495				495	9.17
381		288				288	5.33
382		810				810	15.00
383		90				90	1.67
384		90				90	1.67
385			77			77	1.43
386			240			240	4.44
387		SEE # 386				0	0.00
388		250				250	4.63
389		1038				1038	19.22
390		900				900	16.67
391		476		438		914	16.93
392		648				648	12.00
393		286				286	5.30
394		540				540	10.00
395		1392				1392	25.78
396		296				296	5.48
397		336				336	6.22
398		480				480	8.89
399		400				400	7.41
400		420				420	7.78
401		69				69	1.28
402		576				576	10.67
403		612				612	11.33
404		405				405	7.50
405		630				630	11.67
406		240				240	4.44
407		442				442	8.19
408		736				736	13.63
409		840				840	15.56
410		396				396	7.33
411		625				625	11.57
412		306				306	5.67
413				190		190	3.52
414			928			928	17.19
415		190	1120			1310	24.26
416	•	160				160	2.96
417					524	524	9.70
418		450				450	8.33
419		140				140	2.59
420			324			324	6.00
421		112				112	2.07
422		560				560	10.37
423		600				600	11.11
424	•		405			405	7.50
425		832				832	15.41
426		512				512	9.48
427		496				496	9.19
428		266				266	4.93
429		520				520	9.63
430		630				630	11.67
431				312		312	5.78
432		323				323	5.98
433		287				287	5.31
434		184				184	3.41
435		207				207	3.83
436		672				672	12.44
437		94.5				94.5	1.75
438		94.5				94.5	1.75

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER	AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
439	570				570	10.56
440	1620				1620	30.00
441	324	168			492	9.11
442	160				160	2.96
443	140				140	2.59
444	1098			310	1408	26.07
445	370				370	6.85
446	930			200	1130	20.93
447	300				300	5.56
448	350				350	6.48
449	1540		9		1549	28.69
450	475				475	8.80
451				1200	1200	22.22
452	667				667	12.35
453			18		18	0.33
454	1525				1525	28.24
455	50				50	0.93
456	161				161	2.98
457	234				234	4.33
458	273				273	5.06
459	144				144	2.67
460		12			12	0.22
461		112			112	2.07
462	676			192	868	16.07
463	250				250	4.63
464		336			336	6.22
465	1				1	0.02
466	451				451	8.35
467	525				525	9.72
468	851				851	15.76
469	704				704	13.04
470	800				800	14.81
471	224				224	4.15
472	12				12	0.22
473	6				6	0.11
474	25				25	0.46
475	455				455	8.43
476		234			234	4.33
477	48				48	0.89
478			250		250	4.63
479	900				900	16.67
480	384				384	7.11
481	240				240	4.44
482			120		120	2.22
483	240				240	4.44
484	350				350	6.48
485	880				880	16.30
486	200	144			344	6.37
487	882				882	16.33
488	850				850	15.74
489	66				66	1.22
490	450				450	8.33
491	798		69		867	16.06
492		10			10	0.19
493	1050				1050	19.44
494	711				711	13.17
495	44				44	0.81
496	128				128	2.37
497	900				900	16.67
498	48				48	0.89
499	168				168	3.11
500	161	135			296	5.48
501	240				240	4.44
502	858				858	15.89
503	1372				1372	25.41
504	200	80			280	5.19
505	540			180	720	13.33
506	960		30		990	18.33
507	224	320			544	10.07
508	765				765	14.17
509	539				539	9.98
510	448				448	8.30
511	640				640	11.85

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER	AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
512	490		8		498	9.22
513	638				638	11.81
514	825				825	15.28
515	180			240	420	7.78
516	60				60	1.11
517	384	160			544	10.07
518	549				549	10.17
519	136				136	2.52
520	712		24		736	13.63
521	320				320	5.93
522	1128				1128	20.89
523	336				336	6.22
524	625				625	11.57
525	610				610	11.30
526				85	85	1.57
527	300	80			380	7.04
528	81				81	1.50
529		400			400	7.41
530	440				440	8.15
531	620	144			764	14.15
532	530				530	9.81
533		60			60	1.11
534	480				480	8.89
535	100		48		148	2.74
536			336		336	6.22
537	540				540	10.00
538	1300			400	1700	31.48
539	136				136	2.52
540	550				550	10.19
541	530				530	9.81
542		228			228	4.22
543	80				80	1.48
544		121			121	2.24
545	1188	414			1602	29.67
546	320	200			520	9.63
547	110	150	189.75		449.75	8.33
548	1488			520	2008	37.19
549		6			6	0.11
550		132			132	2.44
551	720				720	13.33
552	702				702	13.00
553	360				360	6.67
554	948				948	17.56
555			150	170	320	5.93
556	510				510	9.44
557	168				168	3.11
558	118.5		64		182.5	3.38
559	118.5		64		182.5	3.38
560	158				158	2.93
561	680				680	12.59
562	1131				1131	20.94
563	816				816	15.11
564	180				180	3.33
565	102			153	255	4.72
566	1344				1344	24.89
567			192		192	3.56
568	460				460	8.52
569			144		144	2.67
570	168		224		392	7.26
571	526		78	176	780	14.44
572	738				738	13.67
573	378				378	7.00
574	155				155	2.87
575	121				121	2.24
576	405				405	7.50
577	200				200	3.70
578	140				140	2.59
579	243				243	4.50
580	532	30			562	10.41
581	913			300	1213	22.46
582				169	169	3.13
583	445			393	838	15.52
584	240				240	4.44

WESTBANK ASBESTOS WASTE VOLUME ESTIMATES

TRACKING NUMBER	AREA–DRIVEWAY	AREA–SERVITUDE	AREA–WALKWAYS	AREA–OTHER	TOTAL AREA	VOLUME
585	578			180	758	14.04
586	840				840	15.56
587	312				312	5.78
588	189			1	190	3.52
589	24				24	0.44
590	400		188	366	954	17.67
591			18	90	108	2.00
592	924				924	17.11
593	400			24	424	7.85
594	192				192	3.56
595	154				154	2.85
596	400				400	7.41
597		4			4	0.07
598	108				108	2.00
599		154			154	2.85
600	252				252	4.67
601	99				99	1.83
602	200	225			425	7.87
603	610		160	120	890	16.48
604	240				240	4.44
605	4640				4640	85.93
606	0			600	600	11.11
607	30	64			94	1.74
608	200				200	3.70
609				80	80	1.48
610		168			168	3.11
611		SEE #610			0	0.00
612			32		32	0.59
613	UNKNOWN				0	0.00

	TOTALS	291387.5	15987.5	4591.75	27778	339744.75	6291.569 YDS
					20%	67948.95	1258.314
						407693.70	7549.88 YDS

TOTAL–DRIVEWAYS, SERVITUDES, WALKWAYS		311966.75 FT²	
	20%	62393.35	
		374360.10 FT²	6932.59 YDS

* = ASPHALT MATERIAL

↑ NOT - ACM

582 SITES

43,500 SY

14,500 SF

FIGURES

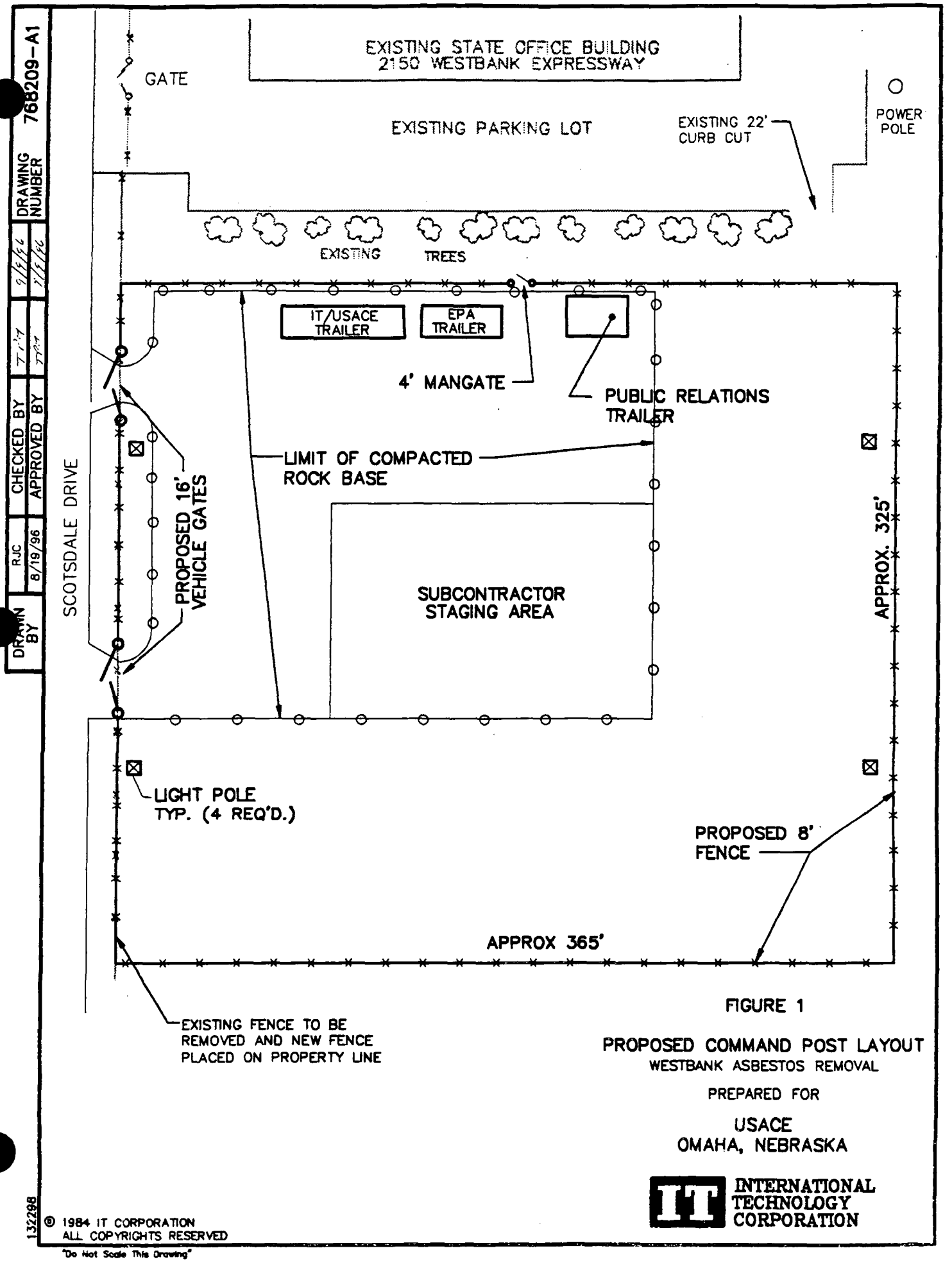


FIGURE 1

PROPOSED COMMAND POST LAYOUT
WESTBANK ASBESTOS REMOVAL

PREPARED FOR

USACE
OMAHA, NEBRASKA

INTERNATIONAL TECHNOLOGY CORPORATION

132298

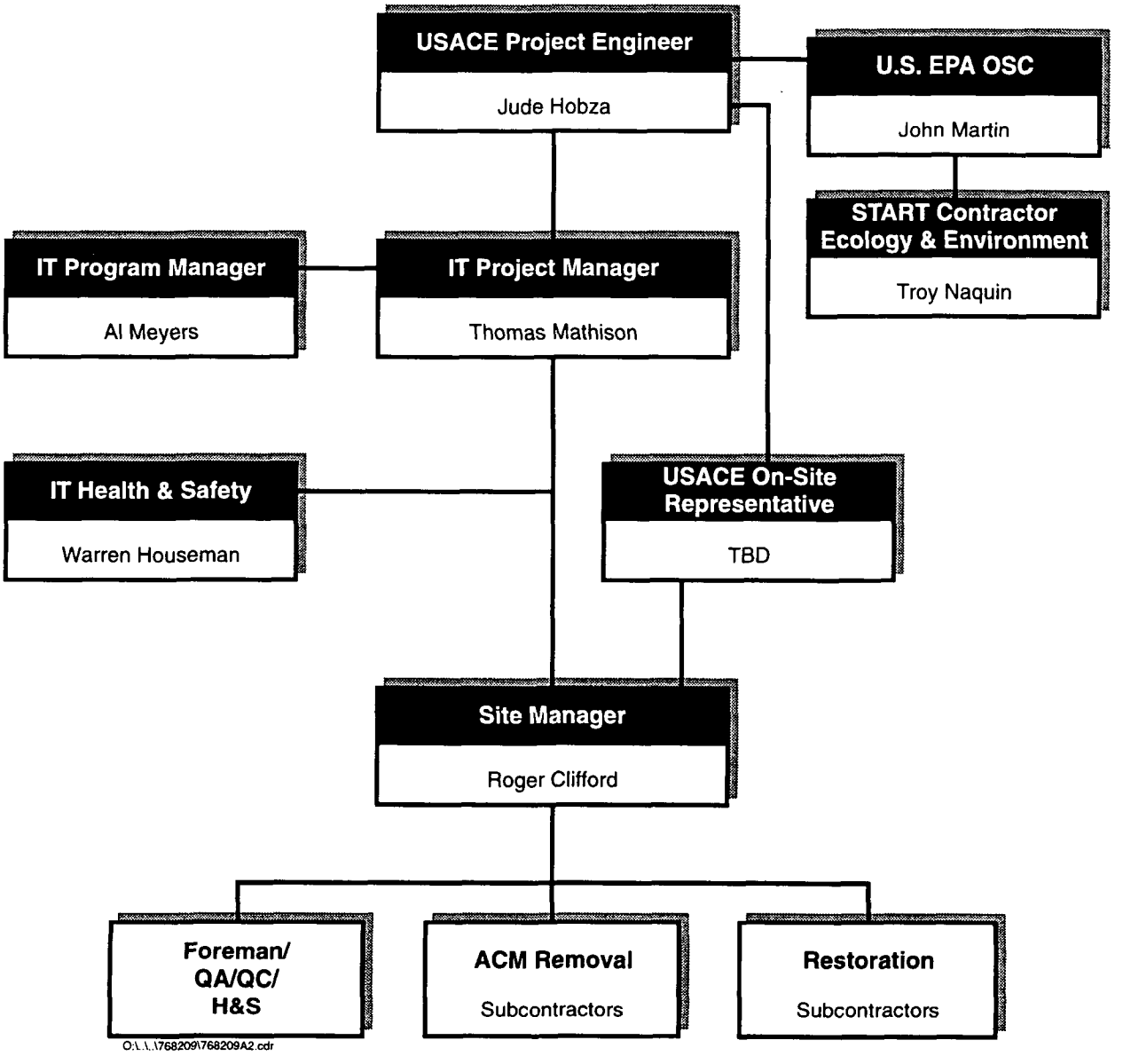
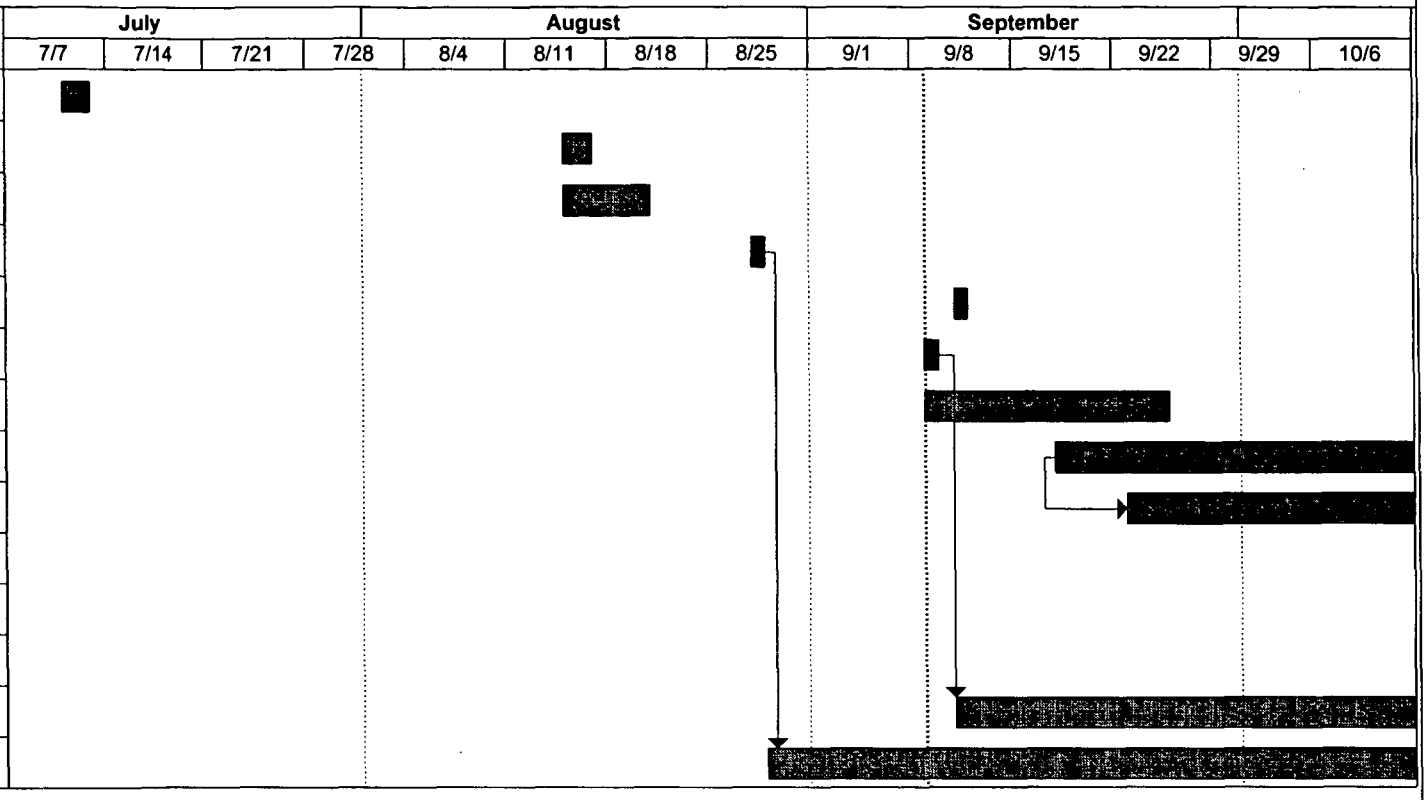


Figure 2
Westbank Asbestos Abatement Project
Organization Chart

WESTBANK ASBESTOS ABATEMENT
NEW ORLEANS, LOUISIANA

ID	Task Name	Duration
1	Site Visit	2d
2	Pre-bid Meetings	2d
3	Work Plan Preparation	1w
4	Negotiations	1d
5	Delivery Order Award	1d
6	Mobilization	1d
7	Command Post Set-up	3w
8	ACM Removal	17w
9	Site Restoration	17w
10	Site Teardown	1w
11	Project Closeout	4w
12	Final Projecct Report	4w
13	Site Administration	17w
14	Project support	17w

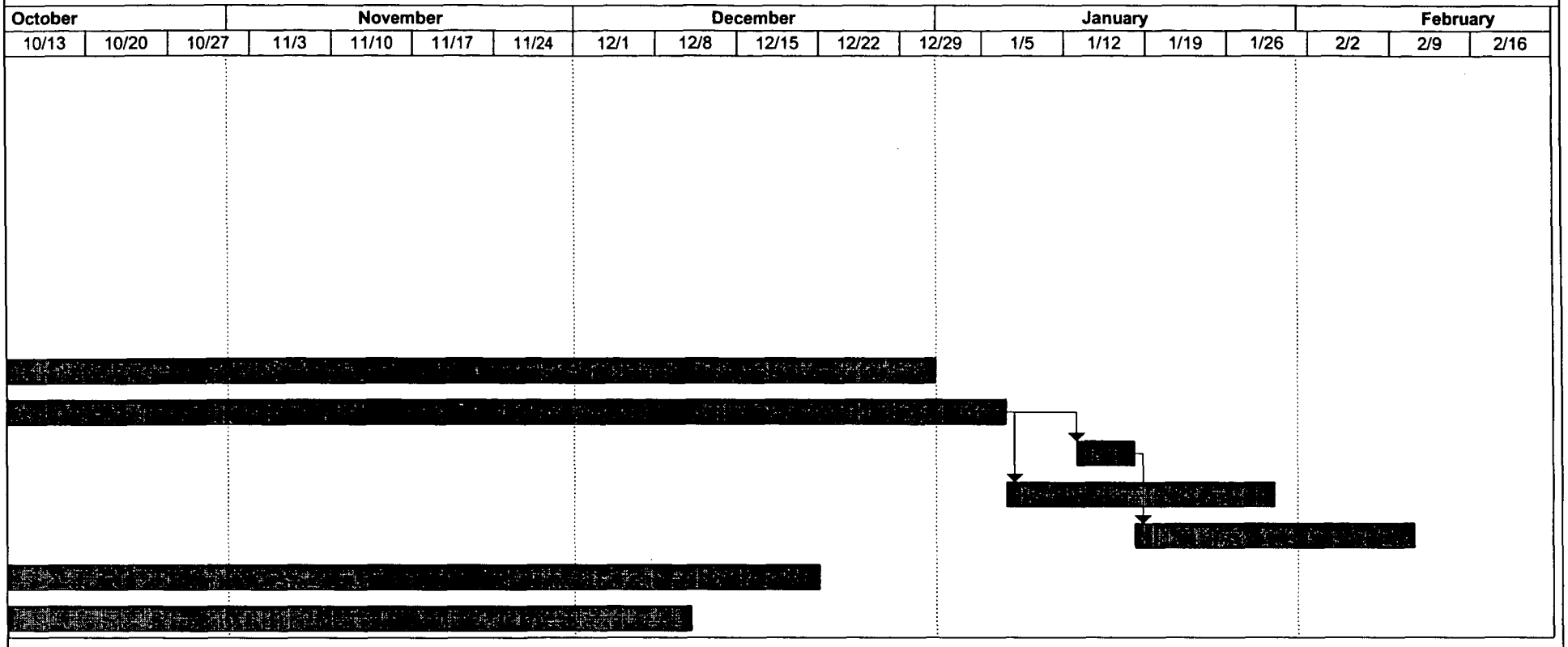


Project:
Date: 9/9/96

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Figure 3

WESTBANK ASBESTOS ABATEMENT
NEW ORLEANS, LOUISIANA



Project:
Date: 9/9/96

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

Figure 3

APPENDIX A

SITE SAFETY AND HEALTH PLAN AND AIR MONITORING QUALITY CONTROL PLAN

SITE SAFETY AND HEALTH PLAN OVERVIEW
WESTBANK ASBESTOS CONTAINING MATERIAL REMOVAL AND DISPOSAL PROJECT
NEW ORLEANS, LOUISIANA

IT Corporation (IT) will be subcontracting the removal, packaging, and transportation of asbestos containing materials (ACM) from approximately 600 residences in the Westbank area of New Orleans, Louisiana. Once selected, these qualified Louisiana ACM Abatement subcontractors will be required to submit and adhere to an Asbestos Abatement Plan (AAP) for all of their anticipated activities. The AAPs will be submitted to the IT Safety and Health Manager (SHM) and USACE for review and acceptance and will supplement the information contained in this SSHP. Level C personal protective equipment (PPE) is anticipated to be the initial level of PPE utilized during ACM removal activities. All other work will be executed utilizing Level D-PPE. To verify the absence of elevated levels of airborne ACM, personnel and area monitoring will be conducted in accordance with Louisiana Department of Environmental Quality Asbestos Regulations and NIOSH methods.

SITE SAFETY AND HEALTH PLAN
WESTBANK ASBESTOS CONTAINING MATERIAL REMOVAL AND DISPOSAL PROJECT
NEW ORLEANS, LOUISIANA

Contract No. DACW45-94-D-0054
Delivery Order No. 29
IT Project No. 768209

Prepared by:

IT Corporation
2790 Mosside Boulevard
Monroeville, Pennsylvania 15146

Prepared for:

U.S. Army Corps of Engineers
Omaha District
Fort Crook Area
Offutt AFB, Nebraska 68113

Adopted By: _____ Date: 8/23/96
IT Corporation's Project Manager

Adopted By: Warren C. Houseman Date: 8/23/96
IT Corporation's Safety and Health Manager

Adopted By: _____ Date: _____
USACE Representative

August 1996

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List of Figures

List of Attachments

Attachment	Title
A	Site Safety and Health Plan Amendments
B	Site and Hospital Location Maps
C	Phase Safety Plan
D	Intrusive Work Checklists
E	Hazardous Chemical Information
F-1	Safety-Training Meeting Records
F-2	Personnel Training Certification
G	Exposure Monitoring/Sampling Forms
H	Eng. Form 3394 - Accident Report
I	IT Accident/Injury Reports

Glossary of Acronyms and Terms

°F	degrees Fahrenheit
AAP	Asbestos Abatement Plan
ABC	adequate airway, breathing, and circulation
ABIH	American Board of Industrial Hygiene
ACGIH	American Conference of Governmental Industrial Hygiene
ANSI	American National Standards Institute
APP	Accident Prevention Plan
APR	air purifying respirator
BP	blood pressure
CBC	complete blood count
CFR	Code of Federal Regulations
CGI	combustible gas indicator
CIH	Certified Industrial Hygienist
CO	Contracting Officer
CPR	cardiopulmonary resuscitation
CRZ	contamination reduction zone
dB(A)	A-weighted decibel
EKG	electrocardiogram
EPA	U.S. Environmental Protection Agency
eV	electron volt
EZ	exclusion zone
GFCI	ground fault circuit interrupter
H&S	health and safety
HEPA	high-efficiency particulate air
IDLH	immediately dangerous to life or health
IT	IT Corporation
kV	kilovolt
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NRR	Noise Reduction Rating
OSHA	Occupational Safety and Health Administration
OSR	On-Site Representative
PEL	permissible exposure limit
PM	Project Manager
PPE	personal protective equipment
ppm	parts per million
SHM	Safety and Health Manager
SMAC	Sequential Multiple Analyzer Computer
SS	Site Supervisor
SSHO	Site Safety and Health Officer

SSHP	Site Safety and Health Plan
TLV	threshold limit value
TWA	time-weighted average
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard

WESTBANK ASBESTOS CONTAINING MATERIAL REMOVAL AND DISPOSAL PROJECT SAFETY AND HEALTH PLAN APPROVALS

Safety and Health Plans require specific approvals as described below. Note that all plans require the approval of a degreed health and safety professional.

Category	Approvals
Level A PPE, IDLH, Variance from corporate procedures, special circumstances.	Project Manager, Project/Location H&S Staff, Region/Division H&S Manager, Corporate Director H&S, CIH.
Level B PPE.	Project Manager, Project/Location H&S Staff, Region/Division H&S Manager (or designee), CIH.
Level C or D PPE.	Project Manager, Project/Location H&S Staff.

Approvals

I have read and approved this Health and Safety Plan with respect to project hazards, regulatory requirements, and IT procedures (please indicate if CIH).

_____
Project Manager/Date

_____
Project/Location H&S Staff/Date

Warren C. Nonemaker, CIH 8/23/96
_____
Region/Division H&S Manager/Date

_____
Corporate Director H&S/Date

Form HS052

SITE SAFETY AND HEALTH PLAN ACKNOWLEDGEMENT FORM

I have been informed of, and will abide by, the procedures set forth in the Site Safety and Health Plan and its Amendments for the Westbank Asbestos Containing Material Removal and Disposal Project.

Printed Name	Signature	Representing	Date

1.0 Introduction

1.1 Objective

This document describes the health and safety (H&S) guidelines developed to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials and incidents at the Westbank Asbestos Containing Material (ACM) Removal and Disposal Project. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements may be revised if new information is received or conditions change. A written amendment will document all changes made to the plan and will be included in Attachment A. Where appropriate, specific Occupational Safety and Health Administration (OSHA), Louisiana Department of Environmental Quality (LDEQ), U.S. Army Corps of Engineers (USACE) standards, or other guidance documents will be cited and applied. This document and amendments to it will be made available to the Contracting Officer (CO).

IT will subcontract all required asbestos abatement activities to qualified Louisiana contractors experienced with the types of ACM abatement methods to be used during this project. These contractors will be required to submit and adhere to an Asbestos Abatement Plan (AAP) which will address all of their anticipated on-site activities. Once complete, the AAP will be submitted to USACE and IT Safety and Health Manager (SHM) for review and acceptance. The asbestos contractor will also be required to adhere to all requirements established in the SHSP. This SHSP has been developed to be used in conjunction with each asbestos abatement contractor's respective AAP. Information contained in these AAPs will include: air sampling, decontamination procedures, work activities, and other topics directly related to ACM abatement activities.

1.2 Site Description and Background

The Westbank ACM sites are located in the Westbank area of New Orleans consisting of the Jefferson Parish communities of Bridge City, Westwego, Marrero, Harvey, and Gretna, and the Orleans Parish community of Algiers.

The apparent source of the ACM has been determined to be from a local plant that operated in Marrero from 1929 to 1975. They manufactured various asbestos containing products which produced an aggregate by-product. The aggregate by-product was pulverized and

mixed with a filler such as gypsum, dolomite, or calcite. This ACM aggregate/filler formed a concrete-like material when mixed with water and was offered to the public free of charge. The ACM has been used as material for driveways, seervitudes, walkways, and playgrounds in residential and other high access areas such as schools and day care facilities. Recent studies of the Westbank sites have indicated that the 43 percent ACM is now deteriorating and is friable.

Work to be completed during this project will include the removal, packaging, and transportation of ACM from approximately 600 Westbank locations.

1.3 Policy Statement

It is the policy of IT to provide a safe and healthful work place for all employees, subcontractors, and consultants in compliance with governmental requirements. Additionally, the requirements of our clients shall take precedence provided that their requirements exceed those of IT and governmental regulations.

We believe in two fundamental principles of safety: all accidents, injuries, and occupational illnesses are preventable; and if an operation cannot be done safely, we will not do it. To put these principles into practice, every associate will receive the appropriate training, equipment, and other resources necessary to complete assigned tasks in a safe and efficient manner.

Safety, industrial hygiene, and loss prevention are the direct responsibility of all members of management, who must create an environment in which everyone shares a concern for their own safety and the safety of their associates. Safety shall take precedence over expediency or shortcuts. It is a condition of employment that all employees work safely and follow established safety rules and procedures.

Managers must conduct their businesses in compliance with governmental safety regulations and company procedures. All IT H&S procedures must be implemented for all IT employees on all projects where IT is the subcontractor, or a joint venture partner. If IT is the prime contractor, IT procedures shall be applied to all IT and subcontractor personnel.

The implementation of effective safety and health practices is a key measure of managerial performance. Management, with the assistance of the internal H&S professional staff, will

conduct audits to assess the effectiveness of the safety program(s) in place, and to identify areas for improvement. All deficiencies shall be corrected promptly.

All injuries, occupational illnesses, vehicle accidents, and incidents with potential for injury or loss will be investigated. Appropriate corrective measures will be taken to prevent recurrence, and to continually improve the safety of our work place.

1.4 References

Title 29, CFR, Part 1926 - Safety and Health Regulations for Construction, Revised July 1, 1995.

U.S. Army Corp of Engineers, Safety and Health Requirements Manual, EM 385-1-1, October 1992.

National Institute for Occupational Safety and Health (NIOSH), Pocket Guide to Chemical Hazards, Publication No. 90-117, Revised 1990.

American Conference of Governmental Industrial Hygiene (ACGIH), Threshold Limit Values and Biological Exposure Indices for 1994-1995.

Material Safety Data Sheet Collection, Genium Publishing Corp., Schenectady, New York, March 1992.

Louisiana Department of Environmental Quality Asbestos Regulations, Title 33, June 1994.

2.0 Organization, Qualifications, and Responsibilities

2.1 All Personnel

All site personnel will be responsible for continuous adherence to H&S procedures during the performance of assigned work. In no case may work be performed in a manner that conflicts with the intent of this plan or the inherent safety and environmental cautions outlined in this plan. After due warnings, personnel violating safety procedures will be dismissed from the site and possibly terminated from further work.

Any person who observes unsafe acts or conditions or other safety problems should immediately report observations/concerns to appropriate personnel as provided in Figure 2-1 "Key Personnel and Chain of Command." If there is any dispute with regard to H&S, on-site staff will attempt to resolve the issue on site and if the issue cannot be resolved, they will consult off-site technical staff and supervisors for assistance. The specific task or operation in question shall be discontinued until the issue is resolved.

2.2 Safety and Health Manager

The Safety and Health Manager (SHM) is responsible for the development, implementation, and oversight of the Safety and Health Program and the Site Safety and Health Plan (SSHP). The SHM may designate a fully trained and experienced individual, such as the Site Safety and Health Officer, to implement and continually enforce safety policies and activities on site.

The SHM will have a minimum of three years of working experience in the chemical or hazardous waste disposal industry. The SHM will have experience in the asbestos removal industry and in air monitoring techniques, development of personal protective equipment (PPE) programs for working with asbestos, and he/she must have working knowledge of applicable federal, state, and local occupational H&S regulations. The SHM will oversee/review the site operations and review and approve this SSHP and AAPs. The SHM will have a formal education and training in occupational H&S or a related field and certification in industrial hygiene by the American Board of Industrial Hygiene (ABIH).

2.3 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) is responsible for providing technical assistance to the Site Supervisor with respect to H&S matters. The SSHO will conduct daily inspections to

determine if operations are being conducted in accordance with the SSHP, AAP, LDEQ regulations, USACE contract requirements, U.S. Environmental Protection Agency (EPA) H&S guidelines, and OSHA regulations. The SSHO will report to the SHM and the Site Supervisor.

The SSHO will have a minimum of one year of working experience at asbestos abatement projects where EPA Level C PPE was required. Specialized training in PPE and respiratory protective equipment, program implementation, proper use of air monitoring instruments, air sampling methods, and interpretation of results is required. He/she must be certified as having completed First Aid and Cardiopulmonary Resuscitation (CPR) by a recognized organization such as the American Red Cross and he/she must have working knowledge of applicable federal, state, and local occupational H&S regulations.

2.4 Project Manager

The Project Manager (PM) is responsible for ensuring that the necessary personnel are available for this project and that the reporting, scheduling, and budgetary obligations for this project are met.

The PM will have a minimum of three years of experience in management of hazardous waste operations and/or emergency response, and an education in the environmental profession or a related field.

2.5 Site Supervisor

The Site Supervisor (SS), as the on-site representative of IT, is responsible for maintaining contact with the USACE representative, the SHM, and the PM. The SS is also responsible for coordinating and enforcing H&S activities for all individuals on site at all times. The SS will report to the PM and work directly with the USACE On-Site Representative (OSR).

The SS will have a minimum of two years of field experience and supervisory experience. The SS will be competent, experienced, and knowledgeable in the field of hazardous and toxic waste cleanup and specific activities identified in the Delivery Order.

2.6 Competent Person

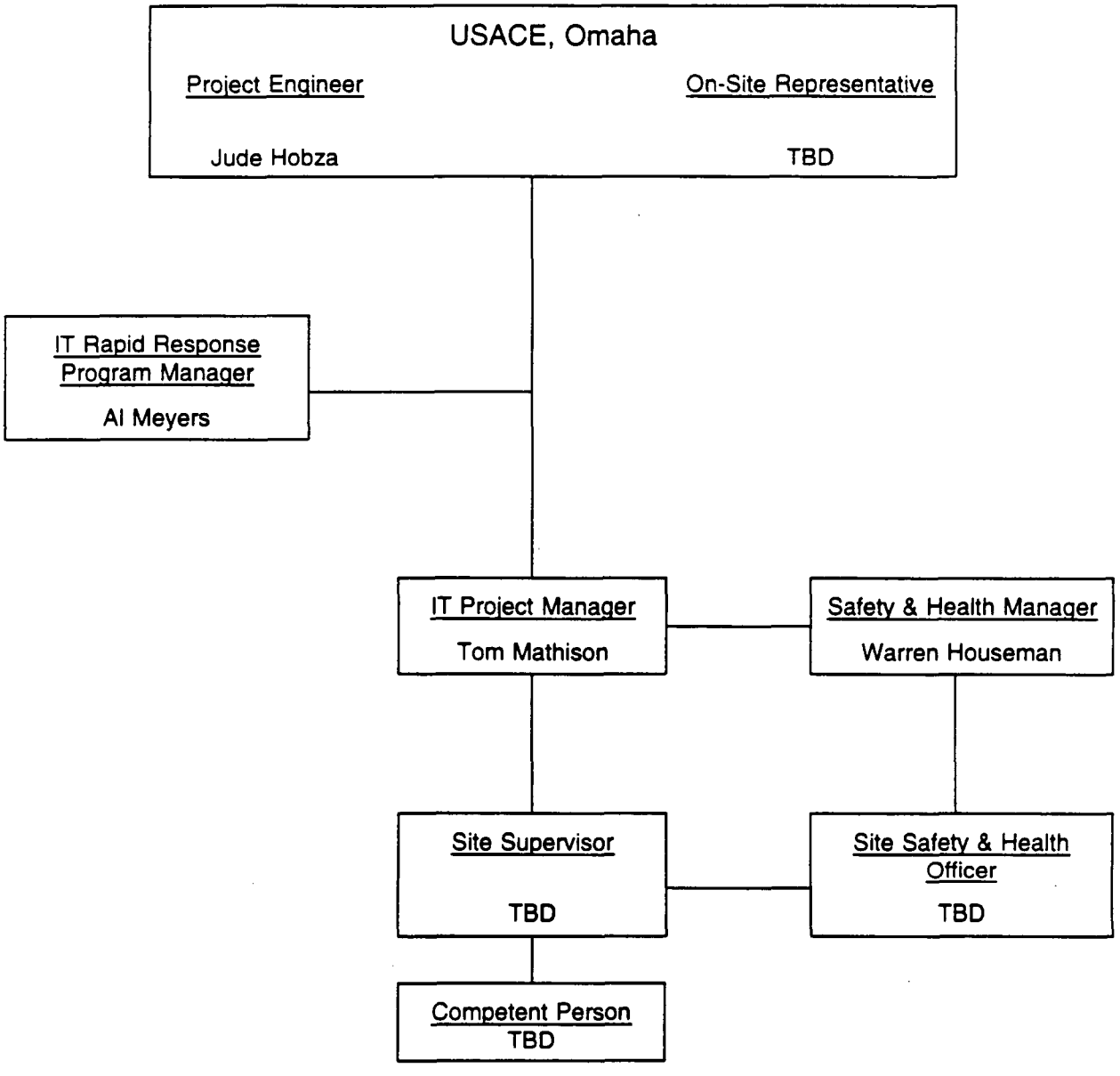
Each ACM removal crew will have a designated competent person that will be present whenever ACM activities are occurring. This person will be capable of identifying existing asbestos hazards in the work place, selecting the appropriate control strategy for asbestos exposure, and has the authority to take prompt corrective measures to eliminate them.

2.7 Subcontractors, Visitors, and Other On-Site Personnel

Subcontractors are responsible for the H&S of their employees and for complying with the standards established in this SSHP, the AAP and the guidelines established in IT's Safety Rules for Contractors. Subcontractors will report to the SS.

All subcontractors, visitors, and other on-site personnel must check in with the SS prior to gaining access to the sites, in order to verify that appropriate entry requirements are met and for the purpose of accountability.

Figure 2-1
Key Personnel and Chain-of-Command



3.0 Job Hazard/Risk Analysis (Accident Prevention Plan)

3.1 Scope of Work

IT will select qualified Louisiana ACM abatement contractors to remove, package, and transport ACM from approximately 600 residences in this Westbank area of New Orleans. Waste generated during this project will be characterized and disposed of properly at an approved disposal facility. The project will be executed in phases. Phases of work necessary include: Phase 1 - Mobilization; Phase 2 - Site Preparation/Teardown; Phase 3 - ACM Removal; Phase 4 - ACM packaging; Phase 5 - ACM Transportation and Disposal; Phase 6 - Demobilization.

The activity hazard analysis is an ongoing process from initiation of the SSHP to implementation and completion of field work. The job hazard analysis provided in this plan is the first phase in a two phase process. The second phase consists of further analysis in the field and completing Phase Safety Plans as necessary (Attachment C). This SSHP serves as the Accident Prevention Plan (APP) and preliminary activity hazard analysis for this project.

3.2 Job Hazard Assessment

3.2.1 Phases 1, 2, and 9 - Hazards and Actions

The hazards and actions for Phase 1 - Mobilization, Phase 2 - Site Preparation/Teardown, and Phase 9 - Demobilization are as follows.

Operating and Working Around Heavy Equipment. Heavy equipment may be utilized to construct and mobilize support areas at each of the sites.

Hazard:	Action:
Equipment backing up and striking people, objects, or aboveground utility lines.	• All mobile heavy equipment must have operational backup alarms. • Personnel must make eye contact with the operator before approaching a machine.

	• Operators must be aware of personnel in the area and use proper hand signals before maneuvering.
	• Operators must maintain at least 10 feet of clearance for zero to 50 kilovolt (kV) systems when maneuvering equipment near overhead power lines (reference EM 385-1-1, for higher kV systems). Complete the Underground/ Overhead Utility Checklist provided in Attachment D.
Personnel in the area of a suspended load or overhead	• Operators must wear hard hats when operating machines unless heavy equipment has an moving equipment.enclosed cab or cage cover.
	• Operators must wear hard hats when going to and from their machines.
Noise.	• Wear hearing protection and other prescribed PPE (Section 5.3).
Pedestrians.	• Barricade/rope off work areas, and inform onlookers of potential hazards.

Clearing and Debris Removal. During site preparation, work areas will be cleared to allow for uninhibited access. This activity will vary a great deal due to the numerous sites in which ACM will be abated.

Hazard:	Action:
Upset residents.	• Ensure that residents are aware of what will be moved and where it is being moved to.
Slip, trip, and fall.	• Be certain of footing and keep work areas free of obstructions.
Contact with moving parts/cuts.	• Follow manufacturer's instructions on use of clearing/removal equipment (safety training).
	• Keep clothing seams tightly fastened and tucked in.

Noise.	• Wear hearing protection and other prescribed PPE (Section 5.3).
Heavy material handling.	• Utilize appropriate material handling equipment. Follow proper lifting and moving techniques and do not lift over 60 pounds without assistance (safety training).
Heat stress.	• Refer to Section 4.4 of the SSHP.

Temporary Construction of Facilities/Material Handling. Storage areas, break areas, and work zones will have to be physically established. This will involve placing fence, signs, barricades, caution tape, etc.

Hazard:	Action:
Electrical shock.	• Use only qualified electricians for electrical work.
Heavy material handling.	• Utilize appropriate material handling equipment. • Follow proper lifting and moving techniques and do not lift over 60 pounds without assistance (safety training).
Slip, trip, and fall.	• Be sure of footing and clear path of travel.
Nip/pinch points and cuts.	• Wear prescribed PPE (Section 5.3). Inspect materials prior to handling them.
Biological hazards.	• Inspect work area carefully and avoid placing hands or feet into concealed areas.

Equipment Decontamination. All equipment used in the exclusion zone (EZ) to perform ACM activities must be properly decontaminated prior to leaving the contamination reduction zone (CRZ).

Hazard:	Action:
Slip, trip, and fall.	• Be sure of footing.
Contact with contaminants and cleaning solutions.	• Wear prescribed PPE (Section 5.3). Follow prescribed personnel decontamination procedures.
Hit by pressure washer or hand tools.	• Only trained personnel will operate equipment. Water sprays must not be directed toward personnel. The requirements of HS303 "Hydroblasting" will be followed.

3.2.2 Phase 3 - Hazards and Actions

The hazards and actions for Phase 3 - ACM Removal are as follows.

Hazard:	Action:
Slip, trip, and fall.	• Be certain of footing and keep work areas free of obstructions.
Uneven working surfaces.	• Be sure work area and path of travel are clear prior to performing survey.
Knife cuts.	• Cutting strokes will always be away from the body. • Cut resistant gloves will be worn. • Do not use a dull blade; replace or have sharpened prior to use.
Pinch points.	• Keep feet and hands clear of moving/suspended materials and equipment. • Stay alert at all times.
Fire.	• Refer to Section 4.9 of SSHP.
Biological hazards.	• Refer to Section 4.13 of SSHP.
Contact with spray glues, etc.	• Be familiar with the materials you are working with (MSDS).

Confined spaces.	• Refer to Section 4.7 of SSHP. • All work areas will be evacuated by the SSHO prior to initiation of activities. Attention will be paid to crawl spaces, basements, and other limited access areas.
Faulty HEPA vacuum.	• Before a HEPA vacuum is placed into service it will be inspected and tested by the competent person.
Asbestos.	• Refer to AAP.

3.2.3 Phase 4 - Hazards and Actions

The hazards and actions for Phase 4 - ACM Packaging are as follows.

Hazard:	Action:
Equipment backing up and striking people, objects, or aboveground utility lines.	• All mobile equipment must have operational backup alarms. • Personnel must make eye contact with the operator before approaching a machine. • Operators must be aware of personnel in the area and use proper hand signals before maneuvering. • Operators must maintain at least 10 feet of clearance for zero to 50 kV systems when maneuvering equipment near overhead power lines (reference EM 385-1-1, for higher kV systems).
Personnel in the area of an ACM packaging.	• Operators must wear hard hats when operating machines. • Barricade or tape off ACM packaging area. • Bags of ACM will be handled with care. Do not place where they can be punctured or damaged.

	• Containers will be of adequate size to hold anticipated quantities.
	• HEPA vacuums will be available to pick up and contain minor spills.
	• Full bags will be sealed using duct tape.
Noise.	• Wear hearing protection and other prescribed PPE (Section 5.3).
Contact with ACM.	• Wear prescribed PPE.
Personnel and equipment adjacent to active work area.	• Barricade packing area.
	• Limit work area to necessary personnel only.
Potential uneven working surfaces.	• Be sure work area and path of travel are clear prior to moving materials or equipment.
Heavy material handling.	• Utilize appropriate mechanical material handling equipment.
Heat stress.	• Refer to Section 4.4 of the SSHP.

3.2.4 Phase 5 - Hazards and Actions

The hazards and actions for Phase 5 - ACM Transportation and Disposal are as follows:

Hazard:	Action:
Personnel struck by vehicles while loading (truck).	• Personnel be sure to make eye contact with vehicle operator before approaching and vise versa.
	• Use hand signals as necessary.
	• Barricade the loading area and keep unnecessary personnel away from the areas.
	• Be certain brakes are applied to parked vehicles and chock parked trailers.

Noise and chemical contaminants.	• Wear hearing protection and other prescribed PPE (Section 5.3).
Heavy lifting.	• Use safe lifting procedures. Loads over 60 lbs require assistance or mechanical lifting device.

3.3 Asbestos Hazards

The apparent source of the ACM that will be removed has been determined to be from a local plant that manufactured various ACM products. The production of ACM resulted in an aggregate by-product which was then pulverized and mixed with fillers such as gypsum dolomite, and/or calcite. This ACM aggregate filler formed a concrete-like material when mixed with water. Typically, the ACM consists of 43 percent asbestos (crocidolite and/or chrysotile). Recent studies have indicated that this material is now deteriorating and is friable. Exposure guidelines for asbestos hazards are provided in Table 3-1. More detailed information for ACM is provided in Attachment E.

Table 3-1
Hazardous Chemicals and Exposure Guidelines

Contaminant	Exposure Limits		Route of Exposure	Symptoms	First Aid
	TLV[a]/ PEL[b]	IDLH			
Chrysotile	0.2 F/CC 0.1 F/CC	N/A	Inhalation Ingestion Skin and/or eye contact	Breathing difficult, finger clubbing, interstitial fibrosis	Eye; irrigate immediately
Crocidolite	0.2 F/CC 0.1 F/CC	N/A	Inhalation Ingestion Skin and/or eye contact	Breathing difficult, finger clubbing, interstitial fibrosis	Eye; irrigate immediately

[a] TLV - Threshold Limit Values and Biological Exposure Indices for 1992-1993 from ACGIH.
[b] PEL - Permissible Exposure Limits from 29 CFR 1926.1101.

4.0 Standard Operating Safety Procedures, Engineering Controls, and Work Practices

4.1 General Practices

- All CRZs and EZs, as established on the site, shall be observed. Entry into a CRZ and EZ shall be by prior notification and authorization of the SS. All required PPE shall be worn prior to entering these zones.

- Legible and understandable precautionary labels shall be affixed prominently to containers of contaminated scrap, waste, debris, and clothing.

- Contaminated materials shall be stored in tightly-closed containers in well-ventilated areas.

- No food or beverages shall be present or consumed in a CRZ or EZ. These are only allowed in designated areas of the support zone.

- No tobacco products shall be present or used, and cosmetics shall not be applied in a CRZ or EZ. These are only allowed in designated areas of the support zone, if areas have been designated.

- Beards, facial hair, or other facial obstructions that interfere with respirator fit will preclude admission to the EZ when respirators are required.

- Field personnel must observe each other for signs of toxic exposure. Indications of adverse effects include, but are not limited to:

  - Changes in complexion and skin discoloration
  - Changes in coordination
  - Changes in demeanor
  - Excessive salivation and pupillary response
  - Changes in speech pattern.

- Field personnel shall be cautioned to inform each other of nonvisual effects of toxic exposure such as:

  - Headaches
  - Dizziness
  - Nausea
  - Blurred vision
  - Cramps
  - Irritation of eyes, skin, or respiratory tract.

- Any detected effects of toxic exposure shall be reported to the SSHO immediately.

- The wearing of contact lenses is not allowed in a CRZ or EZ.

- An emergency eyewash unit shall be located immediately adjacent to employees who handle hazardous or corrosive materials, including decontamination fluids. All operations involving the potential for eye injury, splash, etc., must have approved eye wash units locally available capable of delivering at least 0.4 gallons per minute for at least 15 minutes.

- All on-site activities will be conducted during daylight hours. If work after dusk becomes necessary due to an emergency, adequate lighting must be provided and notification of such activity made to the USACE representative.

- Hazardous work, such as handling hazardous materials and heavy loads, and equipment operation, etc., should not be conducted during severe storms.

- All electrical power must have a ground fault circuit interrupter (GFCI) as part of it's circuit if the circuit is not part of permanent wiring. All equipment must be suitable and approved for the class of hazard present.

- Operations involving the potential for fire hazards shall be conducted in a manner as to minimize the risk of fire. Nonsparking tools and fire extinguishers shall be used or available as appropriate. Sources of ignition shall be removed. When necessary, explosion-proof instruments and/or bonding and grounding techniques will be used to prevent fire or explosion.

- Overhead and underground utility hazards shall be identified and or inspected prior to conducting operations involving potential contact with utility lines.

4.2 Buddy System

The "buddy system" will be used at all times by all field personnel in the EZ. No one is to perform field work alone. Maintain visual, voice, or radio communication at all times.

4.3 Hot Work

Any hot work (i.e., welding, burning, etc.) conducted on site must comply with the guidelines established in IT H&S Procedure HS314.

4.4 Heat Stress

Heat stress may be of concern during the execution of tasks associated with this project. Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, and individual characteristics. Extremely hot weather can cause physical discomfort, loss of efficiency, or personal injury.

Individuals vary in their susceptibility to heat stress. Factors that may predispose individuals to heat stress include:

- Lack of physical fitness
- Insufficient acclimation
- Age
- Dehydration
- Obesity
- Alcohol and/or drug use
- Medical conditions
- Infection
- Sunburn
- Diarrhea
- Chronic disease
- Reclamation (especially after days of being in cool or air condition areas).

Reduced work tolerance and the increased risk of heat stress are directly influenced by the amount and type of PPE worn. PPE adds weight and bulk and severely reduces the body's access to normal heat exchange mechanisms (evaporation, convection, and radiation), and increases energy expenditure. IT Health & Safety Procedure HS400 will be adhered to at all times.

4.4.1 Signs and Symptoms of Heat Stress

If the body's physiological processes fail to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur ranging from mild to fatal.

Heat related problems include:

- Heat Rash - Caused by continuous exposure to heat and humidity and aggravated by chafing clothes. Heat rash decreases the body's ability to tolerate heat as well as being a nuisance.

- Heat Cramps - Caused by profuse perspiration with inadequate electrolytic fluid replacement. Heat cramps cause painful muscle spasms and pain in the extremities and abdomen.

- Heat Exhaustion - Caused by increased stress on various organs to meet increased demand to cool the body. Heat exhaustion causes shallow breathing; pale, cool, moist skin; profuse sweating; and dizziness. Heat exhaustion can be alleviated by promptly moving the affected individual to a cool place to lie down and providing cool fluids to drink.

- Heat Stroke - The most severe for of heat stress. Heat stroke symptoms include hot, dry skin; no perspiration; nausea; dizziness; confusion; strong, rapid pulse; and coma. The body must be cooled immediately to prevent severe injury or death.

4.4.2 Heat Stress Prevention

One or more of the following practices will help reduce the probability of succumbing to heat stress:

- Acclimate workers to heat conditions when field operations are conducted during hot weather.

- Provide plenty of liquids to replace the body fluids lost by perspiration. Fluid intake must be forced because, under conditions of heat stress, the normal thirst mechanism is not adequate to bring about a voluntary replacement of lost fluids.

- Providing cooling devices to aid natural body ventilation. However, these devices add weight and should be balanced against worker comfort.

- If possible, install mobile showers or hose-down facilities to reduce body temperature and cool protective clothing.

- If possible, conduct field operations in the early morning.

- Train personnel to recognize the signs and symptoms of heat stress and its treatment.

- Rotate personnel to various job duties, if possible.

- Provide shade or shelter to relieve personnel of exposure to the sun during rest periods.

Individuals succumbing to the symptoms of heat stress will notify the SSHO immediately. The onset of heat stress will preempt any of the aforementioned, halt activities, and initiate treatment. Early detection and treatment of heat stress will prevent further serious illness or injury and lost work time. Proper and effective heat stress treatment can prevent the onset of more serious heat stroke or exhaustion conditions. Individuals that have succumbed to any heat related illness become more sensitive and predisposed to additional heat stress situations.

4.4.3 Acclimatization

The degree to which an employee's body has physiologically adjusted or acclimatized to working under hot conditions is extremely important. NIOSH recommends a progressive six-day acclimatization period for unacclimatized workers before allowing them to work at their full capacity. Under this regimen, the first day of work on site is begun using only 50 percent of the anticipated workload and exposure time, and 10 percent is added each day through day six. Six days should be considered the average time needed for worker acclimatization due to each individual's physical condition and their ability to adjust to hot and humid environments. It is important to note that employees can lose acclimatization in a matter of days and should be subjected to a short re-acclimatization period when returning from trips home to cooler environments.

4.4.4 Wet-Bulb Globe Temperature Monitoring

The WBGT Index technique will be used to measure heat stress potential for site employees. This method will require the use of a heat stress monitoring device such as the Wibget Heat Stress Monitor (Reuter-Stokes). WBGT measurements will be taken a minimum of four times per day when ambient air temperatures exceed 70°F and personnel are wearing PPE, including Tyvek coveralls. If permeable garments are not worn, this monitoring will begin at 85°F. WBGT readings will be compared to the TLVs outlined in the ACGIH TLVs manual and a work/rest regimen established, as necessary, according to the WBGT obtained. Once the initial work/rest regimen has been established and ambient air temperatures exceed 90°F, physiological monitoring will be conducted by the SSHO in order to make any necessary adjustments to the regimen. WBGT measurement methods and the establishment of work/rest regimens will be based on the information supplied in IT Health & Safety Procedure HS400.

4.4.5 Physiological Monitoring

Ambient temperature and other environmental factors provide basic guidelines to implement work/rest periods. However, since individuals vary in their susceptibility to heat stress, IT will also utilize physiological monitoring to regulate each individual's response to heat stress when ambient temperatures exceed 90°F and impermeable garments are worn. The two physiological parameters that each individual may monitor are:

- Heart Rate - Each individual will count his/her radial (wrist) pulse for 30 seconds as early as possible in the first rest period. If the heart rate of any individual exceeds 100 beats per minute at the beginning of the rest period, then the work cycle will be decreased by one-third. The rest period will remain the same.

- Oral Temperature - Each individual will measure his/her oral temperature with a single-use clinical thermometer for one minute as early as possible in the first rest period. If the oral temperature exceeds 99.6°F at the beginning of the rest period, then the work cycle will be decreased by one-third. The rest period will remain the same.

- Blood Pressure (BP) - BP will be checked prior and after work periods. Initial high blood pressure, for example 90/190, will be reported to the SSHO immediately.

An individual is not permitted to return to work if his/her oral temperature exceeds 100.6°F.

Physiological monitoring information will be recorded on the Employee Record for Heat Stress. All monitoring will be performed by persons with a minimum of current Red Cross first-aid certification and individualized training to recognize the symptoms of heat stress.

4.4.6 Training

Personnel (including subcontractor employees) potentially exposed to heat stress conditions will have the following training during the site-specific training session:

- Employees:

  - Sources of heat stress, influence of protective clothing, and importance of acclimation

  - How the body handles heat

- Heat-related illnesses
- Preventive/corrective measures
- First-aid procedures

- IT Superintendents:
  - Physiological monitoring, WBGT measurement methods, and establishment of work/rest regimes based upon information supplied in IT Health & Safety Procedure HS400.

4.5 Cold Stress

Since this project will occur in southeastern Louisiana cold stress is not anticipated to be encountered. If conditions change, and additional section will be added to this SSHP to address this hazard.

4.6 Hearing Conservation

A hearing conservation program will be implemented at the site when exposures equal or exceed an 8-hour time-weighted average (TWA) of 85 A-weighted decibels (dBA). Hearing loss caused by high sound levels is a problem that can be prevented. As part of the criteria for the medical surveillance program established for this site, audiometric testing is conducted to monitor each worker's ability to hear. Sound level measuring will be conducted initially on site and whenever new tasks are started or additional equipment is brought onto the site that has not previously had its sound level quantified.

Caution should be taken at or around loud locations. Engineering controls, such as mufflers and baffles, should be utilized when feasible to reduce noise. Hearing protection, such as E-A-R™ plugs (Noise Reduction Rating [NRR] of 29), is required to be worn by personnel working with or around heavy equipment and as sound level monitoring dictates.

4.7 Confined Space Entry

IT's procedure for confined space entry will be followed if such an activity is needed during the execution of this project. A confined space is defined as a space large enough and so configured that an employee can bodily enter and perform assigned work, has limited means for entry or exit, and is not designed for continuous employee occupancy. Water storage

vessel entries, and other confined space work may pose additional hazards such as air contamination, flammable or explosive atmosphere, and oxygen deficiency. Excavation entry may pose the possibility of engulfment. IT has detailed training for confined space entry, and only personnel properly trained shall supervise and participate in confined space entry procedures or serve as standby attendants.

All confined spaces are initially considered permit required. Under certain conditions, a space may be reclassified as a nonpermit confined space provided the SSHO approves the reclassification and the space meets the criteria outlined in IT's Confined Space Entry Procedure.

4.8 Sanitation

A break area will be designated and provided in an area in the support zone (outside of contaminated zones). Outdoor or indoor areas may be designated. The designated areas will be clean and will facilitate the number of workers using it. Eating, drinking, and tobacco may be permitted in break areas. Smoking will only be permitted if it is done in an area that is approved by the SHM.

4.8.1 Water

IT will provide an adequate supply of drinking water. These drinks will be dispensed in an approved potable water system and in a manner which prevents contamination between the consumer and dispenser. All outlets dispensing nonpotable water will be posted "Caution - Water Unfit for Drinking, Washing, or Cooking." Systems furnishing nonpotable water and systems furnishing potable water will be constructed and remain completely independent of each other.

4.8.2 Toilets

If permanent toilet facilities are not available (within 500 feet), a chemical toilet for the personnel on site will be provided. Arrangements will be made for the routine servicing and cleaning of these units. The number of toilets provided will be as follows:

Number of Employees	Minimum Number of Facilities (per sex)
20 or fewer	One
More than 20, fewer than 200	One toilet seat and one urinal per 40 workers
More than 200	One toilet seat and one urinal per 50 workers

4.8.3 Trash Collection

Adequate trash receptacles will be placed around the job site for trash collection. Contaminated trash must be segregated from sanitary trash. Sanitary trash receptacles should be labeled "Sanitary Trash" and hazardous waste will be labeled, stored, and managed in accordance with applicable regulations for managing hazardous waste.

High housekeeping standards must be maintained. Trash receptacles shall be emptied on an as-needed basis.

4.9 Fire Prevention and Protection

IT will provide and maintain portable fire extinguishers in the following manner:

- Portable fire extinguishers will be provided, where needed, and inspected on a monthly basis. A visual inspection will be made to ensure that extinguishers are fully charged and in an operable condition. Hoses, nozzles, brackets, and supports will be inspected for deficiencies and corrected. Gauge pressure will be checked on pressurized units on a monthly basis to ensure units are fully charged and nonpressurized units will have their cartridges weighed on an annual basis. The chemical within dry chemical extinguishers will be inspected on an annual basis to ensure that it is powdery and in a free-running condition. An inspection tag will be attached to all extinguishers to designate that they have received an annual inspection.

- Fire extinguishers will be suitably placed, distinctly marked, and readily accessible.

- A fire extinguisher with a rating of not less than 10-B will be located within 50 feet or wherever more than 5 gallons of flammable gas are being used on the work site (this does not apply to integral fuel tanks of motor vehicles).

- A fire extinguisher with a rating of not less than 20-B will be located outside of and within 10 feet of the door opening into any room, building, or trailer used for storage of more than 60 gallons of flammable or combustible liquids.

- If flammable liquids are being stored in an outside location, at least one portable fire extinguisher with a rating of not less than 20-B will be located at least 25 feet from the storage area but not more than 75 feet away.

- All tank trucks or vehicles used for transporting and/or dispensing flammable or combustible liquids will have a portable fire extinguisher with not less than a 20-BC rating.

- A portable fire extinguisher with a rating of not less than 20-BC will be placed within 50 feet of each service or fueling area.

- Fire extinguishers will be placed in storage areas so they are capable of extinguishing materials being stored.

- All fire extinguishers will be approved by a nationally recognized testing laboratory.

- A fire extinguisher with a rating of not less than 2-A will be provided where torches or open flames are in use.

- At least one dry chemical or carbon dioxide fire extinguisher, with a 5-BC rating minimum, will be available for placement on each unit of heavy equipment.

4.10 Electrical Power

All electrical equipment must have a GFCI as part of the circuit. All equipment must be suitable and approved for the class of hazard. Applicable OSHA standards for electrical power, 29 CFR 1926 Subpart "K", shall apply.

4.11 High or Elevated Work

Elevated work, where a fall potential exists, will be performed using appropriate ladders and/or fall protection (i.e., body harness and lifeline). No employee may be exposed to a fall of over 6 feet without being adequately protected.

4.12 Manual Material Lifting

Many different types of objects may be handled manually during site operations. Care should be taken when lifting and handling heavy or bulky items because they are the cause of many back injuries. The following fundamentals address the proper lifting techniques that are essential in preventing back injuries:

- The size, shape, and weight of the object to be lifted must first be considered. No individual employee is permitted to lift any object that weights over 60 pounds. Multiple employees or the use of mechanical lifting devices are required for objects over the 60-pound limit.

- The anticipated path to be taken by the lifter should be inspected for the presence of slip, trip, and fall hazards.

- The feet shall be placed far enough apart for good balance and stability (typically shoulder width). THE FOOTING SHALL BE SOLID.

- The worker shall get as close to the load as possible. The legs shall be bent at the knees.

- The back shall be kept as straight as possible and abdominal muscles should be tightened.

- To lift the object, the legs are straightened from their bending position.

- A worker shall never carry a load that cannot be seen over or around.

- When placing an object down, the stance and position are identical to that for lifting. The legs are bent at the knees and the object lowered.

When two or more workers are required to handle the same object, coordination is essential to ensure that the load is lifted uniformly and that the weight is equally divided between the individuals carrying the load. When carrying the object, each worker, if possible, shall face the direction in which the object is being carried. In handling bulky or heavy items, the following guidelines shall be followed to avoid injury to the hands and fingers:

- A firm grip on the object is essential; leather gloves shall be used if necessary.

- The hands and object shall be free of oil, grease, and water which might prevent a firm grip, and the fingers shall be kept away from any points that could cause them to be pinched or crushed, especially when setting the object down.

- The item shall be inspected for metal slivers, jagged edges, burrs, and rough or slippery surfaces prior to being lifted.

4.13 Biological Hazards

Ticks. Ticks are vectors of many different diseases including rocky mountain spotted fever, Q fever, tularemia, Colorado tick fever, and lyme disease. They attach to their host's skin and intravenously feed on its blood creating an opportunity for disease transmission. Covering exposed areas of the body and the use of tick repellent are two ways to prevent tick bites. Periodically during the workday employees will inspect themselves for the presence of ticks. If a tick is discovered, the following procedure should be used to remove it:

- Do not try to detach a tick with your bare fingers; bacteria from a crushed tick may be able to penetrate even unbroken skin. Fine-tipped tweezers should be used.
- Grip the tick as close to your skin as possible and gently pull it straight away from you until it releases its hold.
- Do not twist the tick as you pull and do not squeeze its bloated body. That may actually inject bacteria into your skin.
- Thoroughly wash your hands and the bite area with soap and water. Then apply an antiseptic to the bite area.
- Save the tick in a small container with the date, the body location of the bite, and where you think the tick came from.
- Notify the SSHO of any tick bites as soon as possible.

Recently, lyme disease has been the most prevalent type of disease transmitted by ticks in the United States.

Poisonous Plants. Poison ivy, poison oak, and poison sumac are identified by three or five leaves radiating from a stem. Poison ivy is in the form of a vine, while oak and sumac are bush-like. All produce a delayed allergic hypersensitivity. The plant tissues have an oleoresin, which is active in live, dead, and dried parts. The oleoresin may be carried through smoke, dust, contaminated articles, and the hair of animals. Symptoms usually occur 24 to 48 hours after exposure resulting in burning or stinging, and weeping and/or crusted blisters. Should exposure to any of these plants occur, wash the affected area with a mild soap and

water, but do not scrub the area. The best antidote for poisonous plants is recognition and avoidance.

Dogs/Cats. It is anticipated that dogs/cats will be present at many of the sites in which ACM will be removed. Owners will be encouraged to keep their pets isolated from work areas. No contact with pets by project personnel will be permitted.

Snakes. There are various types of poisonous snakes indigenous to the southeastern region of the United States. The degree of toxicity resulting from snakebites depends on the potency of the venom, the amount of venom injected, and the size of the person bitten. Poisoning may occur from injection or absorption of venom through cuts or scratches.

The most effective way to prevent snakebites is to avoid snakes in the first place. Personnel should avoid walking at night or in high grass and underbrush. Visual inspection of work areas should be performed prior to activities taking place. The use of leather boots and long pants will be required, since more than half of all bites are on the lower part of the leg. No attempts at killing snakes should be made; many people are bitten in such an attempt.

If someone is bitten by a potentially poisonous snake, the following treatment should be initiated:

- Keep patient calm
- Notify emergency medical services
- Wash the wound and keep the affected body part still
- Apply direct pressure to site of bite if bleeding is extreme
- Keep the affected area lower than the heart
- Carry a victim who must be transported, or have him/her walk slowly
- Transport to closest medical facility.

Flying Insects. Flying insects such as mosquitos, wasps, hornets, and bees may be encountered while site activities occur. Table 4-2 discusses problems associated with them.

4.14 Excavation Safety

When performing excavation activities, IT Procedure HS307 for excavation and trenching must be followed. Any excavation five feet deep or greater into which persons will enter and perform work must be shored, sloped, or otherwise made safe for entry. Excavations less

than five feet in depth and which a competent person examines and determines there to be no potential for cave-in do not require protective systems.

All excavations shall be performed from a stable ground position. Daily inspections of the excavation shall be made by a competent person, one who has received training in excavation safety. The inspector shall determine the likelihood of a cave-in, and remedial action such as sloping or shoring shall be taken if the walls appear to be unstable.

All spoil shall be located at least two feet from the edge of the excavation to prevent it from falling back into the excavation. Perimeter protection will be used for all excavation activities at the site, consisting of warning barricades or flagging placed at a distance not closer than six feet from the edge of the excavation, and displays adequate warning at an elevation of three to four feet above ground.

All project personnel shall participate in the site-specific training session and be instructed on the following requirements:

- Before excavating or grading, the existence and location of underground pipe, electrical equipment, and gas lines will be determined and documented. This will be done by contacting local utility companies at least two days in advance of intrusive work to allow for the working of line locations. If the locations of any lines are in question, a cable avoiding tool will be used to positively locate them.

- No ignition sources are permitted if the ambient airborne concentration of flammable vapors exceeds 10 percent of the lower explosive limit (LEL) during the excavation. A combustible gas indicator (CGI) will be used to make this determination.

- Operations must be suspended and the area vented if the airborne flammable concentration reaches 10 percent of the LEL in the area of an ignition source (i.e., sparks from bucket of excavator).

- Combustible gas readings of the general work area will be made regularly.

- If excavating equipment is located in the vicinity of overhead power lines, safe working distances will be used.

- Personnel entry into any excavation five feet deep or greater is only permitted if the walls are properly shored or sloped.

- Ladders will be provided and placed at an angle not more than 30 degrees from vertical, and secured as necessary. Ladder side rails shall extend at least 3 feet above the ground surface.

- Excavations greater than four feet in depth that require personnel to enter shall have sufficient means of entry and egress (stairs, ladders, ramps). Means of entry/egress shall not require personnel to travel laterally more than 25 feet.

Table 4-1
Minimum Clearance from Energized Overhead Electric Lines

Nominal System Voltage	Minimum Required Clearance
0-50 kV	10 feet
51-100 kV	12 feet
101-200 kV	15 feet
201-300 kV	20 feet
301-500 kV	25 feet
501-750 kV	35 feet
751-1000 kV	45 feet

Table 4-2
Flying Insects

Organism	Description	Habitat	Problem	Severity	Protection
Hornet	One inch long with some body hair. Abdomen is mostly black.	Round, paperlike nest hanging from trees, shrubs, or under eaves of buildings.	One nest may contain up to 100,000 hornets which will attack in force at the slightest provocation.	Severe pain, allergic reactions similar to bees.	Do not come near or disturb nest. If a hornet investigates you, do not move.
Mosquito	Small, dark, fragile body with transparent wings. From 1/8 to 1/4 inch long.	Where water is available for breeding.	Bites and sucks blood. Itching and swelling result.	Can transmit encephalitis and other diseases. Scratching causes secondary infections.	Use plenty of insect repellant and wear gloves. Stay in windy areas.
Wasp	Very thin waist. Color can be black, yellow or orange with stripes.	Underground nest. Paper-like honeycomb nest in abandoned buildings hollow trees, etc.	Stings. Some species will attack if you get too close to the nest.	Severe pain, allergic reactions similar to bees. Can be fatal.	Avoid Nest. Do not swat at them.
Bee	Generally has yellow and black stripes and two pair of wings.	Hollow logs, underground nest, old buildings,	Stings when annoyed. Leaves venom sac in victim.	If person is allergic, nausea, shock, constriction of the airway can result. Death may result.	Be careful and watch where you walk. Cover exposed skin. Avoid areas where bees are swarming. Avoid wearing sweet fragrances and bright clothing. Move slowly or stand still when bees are swarming about you.

5.0 Personal Protective Equipment

Personal protective equipment (PPE) that includes Tyvek coveralls with hoods, hard hats, respirators, chemical resistant gloves, cotton/leather gloves, and chemical resistant steel-toed boots will be provided in sufficient quantities and adequate sizes for all workers and authorized visitors.

The minimum level of protection to be used during this project will be Level D PPE. Level D PPE, at a minimum, shall consist of:

- Standard work uniforms or coveralls
- Steel-toed work boots
- Gloves as needed
- Hearing protection as needed
- Splash shield as needed
- Hard hat.

Each subcontractor's AAP will contain a discussion on: activity-specific levels of protection; donning/doffing procedures; respirator requirements; and a description of the makeup of each level of PPE.

6.0 Site Control Measures

The primary purpose for site control is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas, and to prevent access or exposure to hazardous materials by unauthorized persons. Site work zones will include a support zone, contamination reduction zone, and an EZ.

6.1 Support Zone

The uncontaminated support zone, or clean zone, will be the area outside the EZ and CRZ and within the geographic perimeters of the work area. The area is used for staging of materials, parking of vehicles, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, residents, etc., who will not necessarily be permitted in the EZ. All personnel working on the project arriving in the support zone will, upon arrival, report to the SSHO and sign the site entry/exit log. There will be one controlled entry/exit point from each support zone to the CRZ.

6.2 Contamination Reduction Zone

The decontamination zone, or CRZ, will provide a location for removal of contaminated PPE and decontamination of personnel and equipment. All personnel and equipment should exit via the decontamination area.

6.3 Exclusion Zone

The EZ will exist during active asbestos activities like removal or containerization. Entry to and exit from this zone will be made through a designated point and the competent person will note in the daily log all personnel who entered the EZ. Exit from the EZ must include personnel and equipment decontamination.

6.4 Emergency Entry and Exit

Since there are over 600 work areas, work zones and evacuation routes will be included on a hand-drawn map by the competent person, with concurrence of the SSHO, prior to commencing operations at each particular area. During an emergency, the evacuation routes noted on the site map should be followed. If conditions such as wind direction or physical hazards do not allow access to the prescribed evacuation routes, evacuate by the safest means available and decontaminate to the greatest extent possible.

6.5 Site Entry Requirements

In order to allow an individual into asbestos contaminated areas of the site (CRZ and EZ) he/she must meet the following requirements:

- Documentation of completing training requirements as described in Section 9.0 (including review of this SSHP and the project AAP and signing off as such)
- Documentation of completing medical surveillance requirements as described in Section 10.0
- Successful respiratory fit testing.
- A hazard briefing which includes current operations at the site, hazards that exist, and control measures to follow
- Signing the site entry log.

6.6 Posting Site

Appropriate warning signs will be strategically placed where people enter the EZ and CRZ. Signs should read "DANGER - ASBESTOS - CANCER AND LUNG DISEASE HAZARD - AUTHORIZED PERSONNEL ONLY," or similar. In addition, where the use of respirators and protective clothing is required, addition signs will be posted that will read "RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA."

7.0 Decontamination

In general, everything that enters the EZ at this site, must either be decontaminated or properly discarded upon exit from the EZ. All personnel must enter and exit the EZ through the CRZ. Prior to demobilization from each site, contaminated equipment will be decontaminated or isolated and inspected by the SSHO or a designate before it is moved into the support zone. This inspection shall be noted in the daily log. Specific decontamination procedures to be followed by subcontractors will be addressed in the AAP.

8.0 Exposure Monitoring/Air Sampling Program

According to 29 CFR 1926.1101, air monitoring shall be used to identify and quantify airborne levels of asbestos in order to determine the appropriate level of employee protection needed on each site. Personal air monitoring samples for asbestos will be taken for at least 25 percent of the workers in each shift, which includes the active handling of ACM, or a minimum of two workers per crew, whichever is greater. Each asbestos subcontractor is responsible for collecting these personnel air samples and providing them to IT on a daily basis. IT will log the receipt of these samples and submit them to the EPA for subsequent analysis. Results will be reported to IT, then given to the respective subcontractor for dissemination amongst their employees. NIOSH Method 7400 will be used to obtain and analyze all personnel asbestos samples. All fiber counting will be performed by NIOSH 582 certified personnel.

Monitoring frequencies may be revised by the IT SHM once an adequate number of samples have been collected and analyzed. All air sampling equipment will be maintained and calibrated according to the manufacturer's recommendations. Calibration will be done before and after use each day and under the approximate environmental conditions the instrument will be used. All air sampling activities will be documented on the equipment calibration log.

When applicable, only manufacturer-trained and/or authorized IT personnel will be allowed to perform instrument repairs or preventive maintenance.

8.1 Other Hazardous Conditions

The SSHO will take affirmative action to limit exposures. If unknown chemicals or contamination is encountered, operations will cease until the situation is evaluated. The SSHO will contact the SHM to evaluate any potentially hazardous situations, or any situation with elevated contamination levels. Operations will only be resumed if they can be accomplished in a safe manner.

8.2 Recordkeeping

The SSHO or his designee will be responsible for establishing and maintaining records of all required monitoring as described below:

- Date, time, location, pertinent task, and exposure information
- Description of the analytical methods, equipment used, calibration data
- Type of PPE worn
- Engineering controls used to reduce exposure
- Sampling location/person
- Work operations taking place during monitoring
- Meteorological data
- Signature of analyst/sample collector.

8.3 Employee Notification of Monitoring Results

Each subcontractor will be responsible for notifying their respective employees of the results that represent the employee's exposure as soon as possible following receipt of results. This notification will be in writing either individually for each employee, or by posting results at a centrally located place that is accessible to affected employees.

9.0 Training

9.1 General Training

The SSHO will be responsible for informing all personnel performing on-site activities and all visitors of the contents of this SSHP and ensuring that each person signs the SSHP Acknowledgement Form prior to entering an EZ. By signing this form, individuals recognize the hazards present on site and the policies and procedures required to minimize exposure to hazards or adverse effects caused by hazards. Documentation of certification of training requirements will be reviewed by the SSHO and filed on site.

9.2 Asbestos Training

Training shall be provided to all employees or agents who may be required to handle asbestos containing materials (ACM) for abatement and auxiliary purposes and supervisory personnel who may be involved in planning, execution, design, or inspection of abatement projects. Asbestos abatement workers must have successfully completed a 4-day LDEQ accredited course in procedures and practices of asbestos abatement. (A 5-day LDEQ accredited supervisor course is required for supervisors.) Inspection undertaken to determine the presence of additional ACM will be conducted by personnel who have successfully completed the 3-day LDEQ accredited inspector training course. Project design personnel will take and successfully complete the 3-day LDEQ accredited "Project Designer" course.

9.3 Visitor Training

Site access by personnel making deliveries or performing repairs to utilities, public or government officials, visitors, or local residents will be limited to support areas only. These persons will not be required to comply with the medical and training requirements as defined in this section. Support zone access will be limited to designated work, delivery, or observation areas to minimize any potential exposure to site contaminants. Site observation areas will be located upwind from predominant wind directions, and access to observations areas may be restricted by weather conditions or site activities. Authorization for limited site access will be determined on a case-by-case basis by the SSHO in consultation with the SHM and PM. Site access for such personnel will be limited to areas with no potential for exposure during routine operations. These personnel will be escorted and strictly prohibited from entering the CRZ or EZ.

9.4 Tailgate Safety Meetings

The SSHO conducts a tailgate safety meeting at the beginning of each shift or whenever new employees arrive at the job site once the job commences. The topics discussed at the tailgate safety meeting include H&S considerations for the day's activities, necessary PPE, problems encountered, and new operations. Attendance records and meeting notes are maintained with the project files. At the conclusion of each shift, a debriefing for site employees will be held, if necessary.

9.5 Site Specific Training

IT provides site specific training for all personnel assigned to projects falling within the scope and application of 29 CFR 1926.65. The content of the training will be derived from information contained within this SSHP. All workers must also read and sign the SSHP acknowledging acceptance of site rules and understanding of site hazards before being permitted to enter an EZ. Emergency procedures contained within Section 11.0 will be rehearsed during this training.

9.6 Hazard Communication

All personnel performing field activities shall receive basic hazard communication training which involves a review of the IT written hazard communication program, Material Safety Data Sheets (MSDS), container labeling, and chemical health hazards. Personnel shall be trained on the hazards of chemicals on site by reviewing Section 3.3 and the MSDSs in Attachment E.

9.7 First Aid and CPR

At least two persons trained in a minimum of both American Red Cross first-aid techniques and CPR will be on site whenever activities occur. Refresher training in CPR is required annually, and every 3 years for first aid. These two employees will meet both the training and vaccination requirement of IT's Bloodborne Pathogen Exposure Control Plan.

10.0 Medical Surveillance

IT and its subcontractors will utilize the services of a Board-Certified Occupational Medicine physician for the medical surveillance requirements of this project.

Medical monitoring must be provided to any employee that may be exposed to asbestos in excess of background levels during any phase of these abatement projects. The purposes of a medical monitoring program, in addition to meeting the requirements of the law, are to document the state of health of workers for Worker's Compensation and to determine work relatedness of disease, as well as to ensure fitness for duty, particularly ability to wear a respirator. Smokers are also made aware of the synergistic efforts of cigarette smoking and asbestos exposure. The medical monitoring program provides the appropriate setting to share this information. Medical monitoring shall include at a minimum the requirements of OSHA 29 CFR 1926.1001(j). These requirements include:

- A work/medical history to elicit symptomatology of respiratory disease.
- A chest x-ray (posterior-anterior, 14" x 13") taken by certified radiologist technician and evaluated by a certified B-reader.
- A pulmonary function test, including forced vital capacity (FVC) and forced expiratory volume at one second (FEV), and FEB1/FVC ratio (administered by a NIOSH or American Thoracic Society (ATS). Certified Pulmonary Technician and interpreted and compared to standardized normals by a Board Certified Pulmonary Specialist).
- Employees shall be given the opportunity to be evaluated by a physician to determine their capability to work safely while breathing through the added resistance of a respirator. Examining physicians shall be aware of the nature of respiratory protective devices and their contributions to breathing resistance. They shall also be informed of the specific types of respirators the employees shall be required to wear and the work they will be required to perform, as well as special work place conditions such as high temperatures, high humidity, and chemical contaminants to which they may be exposed.
- Evaluation of groups of workers should take into consideration epidemiologic principles as suggested by the ATS in their statement on the work relatedness of disease adopted in 1982.

11.0 Emergency Contingency Procedures

Site personnel must be prepared to respond and act quickly in the event of an emergency. The following emergency preparedness and response procedures will aid in protecting site workers and the surrounding environment.

11.1 General

The Competent Person in consultation with the SSHO will establish evacuation routes and assembly areas for each of the abatement sites. All personnel entering the work area will be informed of these routes and assembly areas. Evacuation routes, rally points, and the locations of emergency equipment will be included on a hand drawn site map prior to the initiation of on-site activities.

In the case of site evacuation, the following procedures shall be observed:

- Stop working, secure equipment, and return to the CRZ for decontamination.
- Exit area.
- Walk to the designated rally point using the evacuation route.
- Notify the SSHO and USACE representative.
- Remain at the rally point until further information is received.

Personnel should not stand in driveways or in front of gates, as these locations may be used by emergency and support vehicles entering the area.

Each site activity will be evaluated for the potential for fire, explosion, chemical release, or other catastrophic events. Unusual events, activities, chemicals, and conditions will be immediately reported to the Competent Person, SSHO, SS, and SHM.

11.2 Emergency Procedures

If an incident (personal or vehicle accident, property damage, or near-miss) occurs, the following procedures will be used:

- The SSHO or Competent Person will evaluate the incident, assess the need for assistance, and notify the SS and SHM.

- The SSHO or Competent Person will call for outside assistance as needed.

- The SSHO will act as liaison between outside agencies and on-site personnel.
- The SSHO or Competent Person will take appropriate measures to stabilize the incident scene.
- The SSHO will provide technical guidance to the Competent Person as needed and notify the USACE representative.
- The SSHO will ensure that any injured employee's supervisor completes a Supervisor's Employee Injury Report (SEIR) Form and forwards the form to the SHM within 24 hours of the incident. The USACE Site Representative must also be notified of any injury within 24 hours, via submittal of USACE Eng Form 3394.

11.3 Safety Signals

While working on site, the following hand signals will be used for communication when necessary.

Hand Signal	Meaning
Arms crossed over head	Shut-off equipment
Hand gripping throat	Out of air, can't breath
Both hands around Waist	Leave area immediately
Wave hands over head	Need assistance
Thumbs up	OK, I am all right, I understand
Thumbs down	No, negative.

Vehicle or portable air horns will be used for alarm signals as follows:

- One long blast: Emergency evacuation of the site
- Two short blasts: Clear working area around powered or moving equipment.

11.4 Medical Emergency

Prior to field work, on SSHO will contact and coordinate with all potential emergency response organizations so that they will be aware of any potential site hazards and can meet training and medical requirements. All employee injuries must be promptly reported to the SSHO. The SSHO will:

- Ensure that the injured employee receives prompt first aid and medical attention.

- Contact Environmental Medical Resources (EMR) at (800) 229-3674 or the subcontractors medical management organization whenever medical attention is required to ensure that appropriate services are provided.

- Complete the appropriate form or forms and submit them to the SHM within one business day of an incident. Forms include:
  - Supervisor's Employee Injury Report (SEIR, Form HS020A, to be completed by the employee's supervisor)
  - Vehicle Accident Report (Form HS020B)
  - General Liability, property Damage and Loss Report (Form HS020C)
  - USACE Eng Form 3394

- Ensure that the Project Manager and SHM are immediately notified of the incident.

- Initiate an investigation of the incident, with the assistance of a Competent Person.

Chemical Inhalation. Any employee complaining of symptoms of chemical overexposure will be removed from the work area and transported to the designated medical facility for examination. The Competent Person must contact the SSHO and SHM as soon as possible.

Eye Contact. Project personnel who have had contaminants splashed in their eyes or who have experienced eye irritation while in the contaminated zone, shall immediately proceed to the eyewash station, set up in the decontamination zone. Do not decontaminate prior to using the eyewash. Remove whatever protective clothing is necessary to use the eyewash. Thoroughly flush the eye with clean water. Arrange prompt transport to the designated medical facility.

Skin Contact. Project personnel who have had skin contact with contaminants will, unless the contact is severe, proceed through the decontamination zone, to the wash-up area. Personnel will remove any contaminated clothing, and then wash the affected area with water. The worker should be transported to the medical facility listed below, if they show any sign of skin reddening, irritation, or if they request a medical examination.

Personal Injury Accident. In the event of a personal injury accident, the SSHO will assess the nature and seriousness of the injury. In the case of serious or life-threatening injuries, normal decontamination procedures may be abbreviated or bypassed. Less serious injuries such as strains, sprains, minor cuts, and contusions may only be treated after the employee has been decontaminated. Following decontamination, a project team member qualified in FA/CPR will administer suitable first aid. The SSHO will then, if necessary, arrange transport to the appropriate medical facility. The USACE must be notified of all recordable injuries, illnesses, and vehicle accidents.

Because the bites of snakes, spiders, scorpions, etc., are rate, the recommended treatment is outlined here as a reminder in case of a bite. DO NOT cut the site of the bite and suck out the venom, but rather lie the victim down and keep them calm. Try to keep the affected area lower than the heart. Ice may be applied to the area of the bite, but make sure that there is no direct skin contact with the ice. Use a towel for insulation to prevent freezing the skin. DO NOT use a tourniquet or constricting band on the affected limb. Get the victim to medical attention by calling the emergency number for the ambulance.

11.5 Fire

In the case of a fire on one of the sites, the Competent Person or SSHO will assess the situation and determine the proper response. All personnel NOT trained in the use of fire extinguishers shall evacuate the area involved. Only personnel trained in the use of extinguishers may attempt to extinguish the fire with available extinguishers, if safe to do so. If these trained employees do not wish to make the attempt, they are to evacuate also. In the event of ANY fire, IT will call the local Fire Department and notify the USACE Site Representative immediately. Fire fighting is a job for the fire department. No property or equipment is so important as to risk an employee's life.

11.6 Adverse Weather Conditions/Natural Disasters

Adverse weather can take many forms. Thunder and lightning storms, hail, hurricanes, and tornados are a few examples. Sudden changes in the weather, extreme weather conditions, and natural disasters can create a number of subsequent hazards. Generally, poor working conditions arise and slip, trip and fall hazards exist. Natural disasters can create many secondary hazards such as release of hazardous materials to the environment, structure failure, and fires.

Routinely monitoring weather conditions and reports may help reduce the impact of severe weather and natural disasters. It may be necessary to halt certain hazardous operations or stop work altogether to allow the situation to pass. The SSHO must decide what operations, if any, are safe to perform based on existing conditions and anticipated conditions.

The best protection against most severe weather episodes and natural disasters is to avoid them. This means seeking shelter before the storm hits. Stay away from pipes and electrical equipment should lightning be a threat and watch for damage caused by lightning strikes nearby.

11.7 Critique and Follow-Up of Emergency Procedures

The USACE site representative shall be verbally notified immediately and receive a written notification within 24 hours of all accidents or incidents including releases of toxic chemicals, fires, or explosions. The report shall include the following items:

- Name, organization, telephone number, and location of the Contractor
- Name and title of the person(s) reporting
- Date and time of accident/incident
- Location of accident/incident (i.e., site location, facility name)
- Brief summary of accident/incident including pertinent details such as type of operation ongoing at time of accident
- Cause of accident/incident, if known
- Casualties (fatalities, disabling injuries)
- Details of any existing chemical hazard or contamination
- Estimated property damage, if applicable
- Nature of damage, effect on contract schedule
- Action taken by Contractor to ensure safety and security
- Other damage or injuries sustained (public or private).

The SS and the SSHO will investigate the cause of the spill or discharge to prevent its reoccurrence. The investigation should begin as soon as practical after the incident is under control, but not later than the first work day after the incident. Investigations will follow the procedures described below:

- Interview witnesses and participants as soon as possible or practical
- Determine the chronological sequence of events (opinions as to cause should not be solicited at this time)
- Note the location, movement, displacement, liquid levels, sounds, noises, or other sensory perceptions experienced by the participants or witnesses
- Obtain weather data
- Ascertain the location and position of all switches, controls, etc.
- Verify the condition of all safeguards.

After the facts have been collected, causal factors should be identified. Two causal factors typically exist, apparent and contributing; and there may be several of each. Apparent factors are those which are self-evident or readily deduced. Contributing factors usually become apparent by questioning why the apparent causal factor was allowed to exist.

Table 11-1
Emergency Phone Numbers
Westbank Asbestos Containing Material
Removal and Disposal Project

New Orleans Fire Department	
Emergency	911
Nonemergency	(504) 821-2222
Orleans Parish Policy	
Emergency	911
Nonemergency	(504) 565-7800
West Jefferson Ambulance Service	(504) 340-8661
West Jefferson Medical Center	(504) 347-5511
National Poison Control Center	(202) 625-3333
National Response Center	(800) 424-8802
Chemtrec	(800) 424-9300
National Poison Control Center	(800)458-5842
TSCA Hotline	(202) 554-1404
Center for Disease Control	(404) 452-4100 (404) 329-2888
EPA Environmental Response Team (ERT)	(201) 321-6660
RCRA Hotline	(800) 424-9346

12.0 Recordkeeping and Data Management

Proper recordkeeping and data management are essential in the implementation of this SSHP. The forms associated with the recordkeeping and data management requirements must be completed in an accurate, timely fashion and filed with the appropriate entities. It is the responsibility of the SS to ensure that the forms are properly completed. Completed forms will be kept and maintained by IT. These records shall be maintained for a five-year period. Subcontractors will also be responsible for keeping a copy of the forms pertaining to their personnel.

A copy of pertinent site forms and logs have been provided in the Attachments to this SSHP.

12.1 Logs

The SSHO will maintain and complete a daily log for each day's work. The daily log will document chronologically each day's H&S activities in sufficient detail for future reference as needed. Other relevant data and field information will be recorded on separate log forms for air monitoring, sampling, equipment calibration inspections, and incident reporting.

An EZ sign-in log will be maintained that will provide a project record of the following information for each work shift's activities:

- Worker's name
- Work area
- Duties performed
- Level of protection
- Time in/time out.

All personnel will be required to log in and out of the EZ.

A visitors sign-in log will be maintained in the project office and administration area. Visitors requesting access to hazardous field activities must have appropriate project approval, be medically qualified, and have the H&S training prerequisites for hazardous waste operations.

An OSHA 2203 Job Safety and Health Protection poster will be clearly displayed in the site administration trailer.

12.2 Safety Inspections

IT's accident prevention program is centered around the following key procedures:

- Project reporting, investigation, and review of all near misses, incidents, and accidents
- Management reviews of all incident/accident reports, corrective action, and project safety concerns
- Review of project, operations, and construction activities by H&S professionals.

Safety reviews and inspections are conducted by all tiers of the management structure and are documented. A list of all corrective action items is required to be maintained showing the corrective action, responsible person, and the date action is to be completed. Follow-up inspections are conducted by H&S personnel to ensure that corrective actions or measures have been implemented.

The SS or PM will inspect the site weekly and interview one or two site workers regarding areas of safety concerns or ideas for safety improvement. Site supervisory personnel will inspect site conditions and activities daily to identify changing conditions or potential hazards. Identified safety and occupational health deficiencies and suggested corrective measures will be brought to the attention of the SS and SSHO. Safety review inspections will be recorded and filed for reference by project management and USACE personnel.

12.3 Accident Reporting and Investigation

All project personnel are required to report all near misses, injuries, illnesses, and accidents to their immediate supervisor. The SSHO shall immediately arrange appropriate medical care as required. Once immediate medical care for the injured personnel has been accomplished, the SSHO shall complete and submit the appropriate report forms within 24 hours. The appropriate form(s) to be completed may include:

- IT Supervisor's Employee Injury Report
- IT Vehicle Accident Report
- IT General Liability, Property Damage, and Loss Report.

Copies of these forms are in Attachment I of this SSHP.

Identified safety and occupational health deficiencies and corrective measures shall be documented and filed on site for reference by the USACE or designated representative.

All near misses, injuries, illnesses, and accidents shall be investigated by on-site management personnel. The SS, PM, and SSHO will investigate the conditions which led to the accident. They will document how the accident occurred and identify unsafe acts or conditions that occurred or existed at the time of the accident. Corrective actions will be determined and implemented to prevent recurrence of the accident, and responsibility for implementation of corrective actions will be assigned. The investigation shall be started immediately, and all information shall be collected as soon as possible after the occurrence. The final report and required forms will be submitted to the USACE and other appropriate personnel.

ATTACHMENT A

SITE SAFETY AND HEALTH PLAN AMENDMENTS

ATTACHMENT A

SITE SAFETY AND HEALTH PLAN AMENDMENTS

Site Name: _____

Site Safety and Health Plan Ammendment # _____ Date: _____

Type of Amendment: _____

Reason for Amendment: _____

_____

_____

Alternate Safeguard Procedures: _____

_____

_____

_____

Required Changes in PPE: _____

_____

_____

_____

Required Changes in Monitoring: _____

_____

Approvals:

_____ _____

IT Project Manager/Date IT Safety & Health Manager/Date

_____ _____

USACE On-Site Representative/Date USACE Contracting Officer/Date

ATTACHMENT B

SITE AND HOSPITAL LOCATION MAPS

A HOSPITAL LOCATION MAP WILL BE DEVELOPED AND INCLUDED ONCE PERSONNEL MOBILIZE TO THE AREA AND DETERMINE THE BEST ROUTE TO THE HOSPITAL

ATTACHMENT C

PHASE SAFETY PLAN

PHASE SAFETY PLAN		
Contractor Name: **IT Corporation**		Contract No.: **DACW05-94-R-0001**
Location:		Date Prepared:
Equipment to be used:		
Phase of Construction	Hazards to be Controlled	Actions to be Taken

Approved by: _____ _____

(IT Site Supervisor) (Date) (IT Safety and Health Manager) (Date)

PHASE SAFETY PLAN ACKNOWLEDGMENT

I have been informed of, and understand the elements of this Phase Safety Plan.

Printed Name	Signature	Representing	Date

ATTACHMENT D

INTRUSIVE WORK CHECKLISTS

ATTACHMENT 2

UNDERGROUND/OVERHEAD UTILITY CHECKLIST

Project Name/Number_____ **Date** _____

Location_____

This checklist must be completed for any intrusive subsurface work such as excavating or drilling. It records the fact that all underground and overhead structures and utilities in the work area are identified and located. The Project Manager must request utility markouts before the start of field operations to allow the client and utility companies time to complete them. If complete information is not available, a magnetometer survey must be performed to locate obstacles prior to excavating or drilling.

PROCEDURE

A diagram of the project area depicting the proposed location of excavation or drilling sites must be attached to this Health and Safety Plan. The diagram must clearly indicate the areas checked for underground structures/utilities and overhead power lines. This form and the diagram must be signed by the Project Manager, the IT Field Supervisor, and the client representative (if applicable).

CHECKLIST

TYPE OF STRUCTURE	PRESENT	NOT PRESENT	METHOD OF MARKOUT
Electric Power Line			
Natural Gas Line			
Telephone Line			
Water Line			
Product Line			
Steam Line			
Sewer Line			
Drain Line			
Underground Tank			
Overhead Power Line			
Overhead Product Line			
Septic Tank/Drain			

Client Representative_____ _____
(If applicable) (Signature) (Date)

IT Project Manager_____ _____
(Signature) (Date)

IT Field Supervisor_____ _____
(Signature) (Date)

HS309Attachment 2/3-10-95

ATTACHMENT E

HAZARDOUS CHEMICAL INFORMATION

Material Safety Data Sheets Collection

Genium Publishing Corporation
1145 Catalyn Street
Schenectady, NY 12303-1836 USA
(518) 377-8854

Sheet No. 15
Asbestos and Asbestos-containing Materials

Issued: 11/90

Section 1. Material Identification

33

R 0
I 4
S 1
K 0
Genium

HMIS
H 3
F 0
R 0
PPG*
* Sec. 8

Asbestos and Asbestos-containing Materials Description: Asbestos is a generic term applied to many naturally occurring, hydrated silicates (minerals) found in rock which separate into flexible fibers when crushed or processed. Commercially important forms are amosite, anthrophyllite (mined and used only in Finland), chrysotile, and crocidolite. Other types include tremolite and actinolite. Most widely used in US industry is chrysotile, a fibrous form of serpentine. Since asbestos is insensitive to chemical attack and incombustible, there are over 2000 uses as processed fiber. It is added to such diverse materials as cement, vinyl, plaster, asphalt, and cotton, although due to its health hazards other materials are now replacing it wherever possible. Its use is now limited to products that bind fibers within the product. The largest use of asbestos is in asbestos cement for pipes in water supply, sewage disposal, and irrigation systems; ducts; and flat and corrugated sheets for a wide variety of construction applications. Other uses include fire-resistant textiles, floor tiles, underlayment and roofing papers, friction materials (brake linings), reinforcing filler in elastomers for packing and gaskets, reinforcing pigment in surface coatings and sealants, thermal and electrical insulation media, as a component of taping compound and industrial talcs, and as filler in industrial greases. About 98% of crocidolite is used in production of asbestos cement pipe. Between 1950 and 1972 asbestos was used as spray insulation in buildings, but OSHA now prohibits spray application of actinolite, anthophyllite, asbestos, or tremolite (29 CFR 1910.1001).

Other Designations: CAS No. 12172-73-5, amosite, brown asbestos; CAS No. 1332-21-4, asbestos; CAS No. 12001-29-5, chrysotile, white asbestos; CAS No. 12001-28-4, crocidolite, blue asbestos; Ascarite; earth flax; mountain cork; stone flax.

Molecular Formulas: Amosite, $(FeMg)SiO_3$; anthophyllite, $(MgFe)_7Si_8O_{22}(OH)_2$; chrysotile, $3MgO{\cdot}2SiO_2{\cdot}H_2O$; crocidolite, $NaFe(SiO_3)_2{\cdot}FeSiO_3{\cdot}H_2O$; tremolite, $Ca_2Mg_5Si_8O_{22}(OH)_2$.

Manufacturer: Contact your supplier or distributor. Consult the latest *Chemicalweek Buyers' Guide*(73) for a suppliers list.

Cautions: Asbestos causes three specific diseases: asbestosis (fibrous lung scarring), lung cancer, and mesothelioma (cancer of the chest lining and abdominal cavities). Prevent or maintain exposures at the lowest feasible level.

Section 2. Ingredients and Occupational Exposure Limits

	1989 OSHA PELs*			1990-91 ACGIH TLVs	1988 NIOSH REL
Asbestos	**TWA:** 0.2 f/cc†	**Action Level TWA:** 0.1 f/cc	**Excursion Limit:** 1.0 f/cc‡	**TWA:** 2.0 f/cc§	0.1 f/cc
Amosite	0.2 f/cc	0.1 f/cc	1.0 f/cc	0.5 f/cc	0.1 f/cc
Chrysotile	0.2 f/cc	0.1 f/cc	1.0 f/cc	2.0 f/cc	0.1 f/cc
Crocidolite	0.2 f/cc	0.1 f/cc	1.0 f/cc	0.2 f/cc	0.1 f/cc

1985-86 Toxicity Data for Asbestos (CAS No. 1332-21-4)**

Human, inhalation, TC_{Lo}: 1.2 fb/cc, continuous exposure over 19 years. Toxic to lungs.

* OSHA has proposed a lower asbestos exposure limit of 0.1 f/cc as an 8-hr TWA (*Industrial Safety and Hygiene News*, 8/90).
† Fiber/cm³
‡ Average over a 30-min sampling period.
§ As determined by membrane filter method at 400 to 450X magnification (4-mm objective) phase contrast illumination. Fibers longer than 5 μg and with an aspect ratio ≥ 3:1 (ACGIH).
** See NIOSH, *RTECS* (CI6475000), for additional toxicity data.

Section 3. Physical Data

Melting Point: Decomposes
Water Solubility: Insoluble (breaks down slowly in hot water)
Molecular Weight: Varies with asbestos form (Sec. 1)
Appearance and Odor: White or greenish (chrysotile), blue (crocidolite), or gray-green (amosite) fibrous, odorless solids.

Section 4. Fire and Explosion Data

Flash Point: None reported	Autoignition Temperature: None reported	LEL: None rpeorted	UEL: None reported

Extinguishing Media: Asbestos is nonflammable. Use dry chemcial, CO_2, water spray, or regular foam. Do not scatter spilled material with high-pressure water streams. **Special Fire-fighting Procedures:** Isolate hazard area and deny entry. Since there may be airborne asbestos fibers, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode; structural firefighter's protective clothing provides limited protection. If feasible, remove containers from fire area. Avoid dust generation. Be aware of runoff from fire control methods. Do not release to sewers or waterways. Develop decontamination procedures for protective clothing and equipment.

Section 5. Reactivity Data

Stability/Polymerization: Asbestos is inert under ordinary room temperature and heated use conditions. It is heat resistant, but decomposes and alters its microscopic fiber structure above 600 °C (1112 °F). Chrysotile dehydroxylates at 1112 to 1436 °F (600 to 780 °C); the "asbestos anhydride" in turn breaks down to a mixture of silica (SiO_2) and fosterite (Mg_2SiO_4) at 1472 to 1562 °F (800 to 850 °C). Above 1832 °F (1000 °C) magnesium pyroxenes form and melt at ~2642 °F (1450 °C). **Chemical Incompatibilities:** Strong acids can attack chrysotile and rapidly extract its MgO and H_2O content; glacial acetic acid can decompose it. Hot water slowly breaks down chrysotile. Like other asbestos forms, it resists strong alkali (5M NaOH at least up to 100 °C).

Section 6. Health Hazard Data

Carcinogenicity: The NTP, IARC, OSHA, and ACGIH list asbestos as a human carcinogen. **Summary of Risks:** Asbestos may cause 1) asbestosis, 2) lung cancer, 3) mesothelioma, 4) pleural plaques, and 5) several other forms of cancer. *Asbestosis* is fibrosis (scarring) of lung tissue after many years of high-level occupational exposure. Scarring may be progressive even after exposure ceases. Even though detectable in lungs of a high proportion of adults in industrialized areas, asbestosis does not result from lower level environmental exposure. Its symptoms range from mild shortness of breath and dry cough to severe disabling breathlessness, heart failure, and ultimately death. Lung scarring can be seen on X-ray and alterations in lung function can be detected with spirometry (a medical test). Examination typically detects rales (crackling sounds in lungs). Severe cases may have cyanosis (bluish skin discoloration) and clubbing of fingertips. *Lung cancer* can result from lower exposure levels than asbestosis, but also takes many years to develop. Smokers exposed to asbestos are at 5 to 10X higher risk than exposed nonsmokers. *Mesothelioma* is a very aggressive cancer of the pleura (lining around the lungs) or peritoneum (lining of the abdomen), and develops after decades of (sometimes low level) exposure. Symptoms may include chest and abdominal pain, weight loss, and/or shortness of breath, with death within 2 years of diagnosis. *Pleural plaques* are thickenings, sometimes with calcium deposits, of the lungs's lining and may be seen on X-ray. While not associated specifically with health effects, they indicate significant exposure. *Other sites of cancer* include larnyx (vocal cords), portions of digestive tract, and possibly the kidney. Asbestos's toxicity depends on fiber type (crocidolite > amosite > chrysotile), size (longer > shorter), shape (long, thin needle-like > curly), and solubility. Health effects depend on dose (exposure concentration and duration), smoking habits, and individual susceptibility. Prevent or maintain exposures at lowest feasible level.

Continue on next page

Section 6. Health Hazard Data, *continued*

Medical Conditions Aggravated by Long-Term Exposure: Long-term, high-level exposure may aggravate any chronic lung (asthma, emphysema, bronchitis) or heart condition. **Target Organs:** Respiratory system; possibly digestive system. **Primary Entry Routes:** Inhalation, ingestion, dermal contact. **Acute Effects:** Nose, throat, skin and eye irritation are possible with high exposure. **Chronic Effects:** Asbestosis, lung cancer, and mesothelioma typically develop decades (20 to 40 years) after exposure begins, but may occur sooner. **FIRST AID** *Emergency personnel should protect against asbestos exposure.* **Eyes:** Do not rub. Gently lift eyelids and flush with flooding amounts of water. **Skin:** Shower with water and soap. Wet contaminated clothing prior to removal and seal in a plastic bag for disposal as hazardous waste. If rash develops, consult physician. **Inhalation:** Remove to fresh air. Clean any fibers from nose and mouth. Encourage victim to cough, spit, and blow nose to remove fibers. **Ingestion:** Induce vomiting *only* if awake and alert. Consult a physician. **After first aid, consult medical care provider. Note to Physicians:** Asbestos diagnosis is based on chest X-ray with an abnormal ILO "B" reading (small irregular opacities), rales, restrictive pattern spirometry, adequate exposure history, and symptoms. Consider pneumovax, annual flu shot, and other supportive treatment as needed.

Section 7. Spill, Leak, and Disposal Procedures

Spill/Leak: Notify safety personnel and evacuate all unnecessary personnel. Cleanup personnel should protect against dust inhalation and skin or eye contact. Avoid dust generation, blowing, dry brushing, and dry mopping. Provide HEPA-filtered (high-efficiency particulate air) portable ventilation systems. Use wet cleaning methods or approved HEPA vacuum cleaning system to pick up spills. The techniques used must collect particulate without dispersing dust into air. Place waste in *properly labeled* dust-tight containers or sealed, heavy-gauge, impervious plastic bags for disposal. Follow applicable OSHA regulations (29 CFR 1910.120). **Disposal:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

EPA Designations
RCRA Hazardous Waste (40 CFR 261.33): Not listed
Listed as CERCLA Hazardous Substance* (40 CFR 302.4), Reportable Quantity (RQ): 1 lb (0.454 kg) [* per Clean Water Act, Sec. 307(a); Clean Air Act, Sec. 112]
Listed as a SARA Toxic Chemical (40 CFR 372.65)
SARA Extremeley Hazardous Substance (40 CFR 355): Not listed
OSHA Designations
Listed as Air Contaminant (29 CFR 1910.1000, Table Z-1-A, Z-3)

Section 8. Special Protection Data

Note: *Do not substitute personal protective clothing or equipment for proper handling and engineering controls.* **Goggles:** Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). **Respirator:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. For airborne concentration of asbestos, tremolite, anthophyllite, actinolite, or a combination of these minerals not in excess of 2 f/cc (10 X PEL), use a half-mask air-purifying respirator, other than a disposable respirator, equipped with high-efficiency filters; not in excess of 10 f/cc (50 X PEL), a full facepiece air-purifying respirator equipped with high-efficiency filters; not in excess of 20 f/cc (100 X PEL), any powered air-purifying respirator equipped with high-efficiency filters or any supplied-air respirator operated in continuous flow mode; not in excess of 200 f/cc (1000 X PEL), a full facepiece supplied-air respirator operated in pressure-demand mode; greater than 200 f/cc (>1,000 X PEL) or unknown concentration, a full facepiece supplied-air respirator operated in pressure-demand mode and equipped with an auxillary positive-pressure self-contained breathing apparatus (29 CFR 1910.1001). *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* **Other:** Wear impervious gloves, boots, aprons, and gauntlets to prevent skin contact. **Ventilation:** Provide general and local exhaust ventilation and dust collection systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred since it prevents contaminant dispersion into work area by controlling it at its source.[103] **Safety Stations:** Make available in work area emergency eyewash stations, safety/quick-drench showers, and washing facilities. **Contaminated Equipment:** Never wear contact lenses in the work area: they may absorb, and all lenses concentrate, irritants. Never enter lunchroom facilities or leave workplace wearing clothing or equipment worn during workshift. Separate contaminated work clothes from street clothes. *If proper hygiene is not rigorously followed, family members can be exposed to asbestos fibers.* Place contaminated protective devices or work clothing in labeled, impermeable, and sealed containers or bags. Do not remove asbestos from clothing by blowing or shaking. Launder contaminated clothing before wearing. Inform laundering service of asbestos-contaminated clothing and of asbestos' potential harmful effects (29 CFR 1910.1001). **Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using asbestos, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9. Special Precautions and Comments

Storage Requirements: Store in closed (dust-tight) containers or heavy-gauge impervious plastic bags in a clean, secure area protected from physical damage. Do not open containers that can release asbestos dust without providing proper enclosure or control measure. **Engineering Controls:** Educate workers about asbestos's and asbestos-containing materials' hazards. Inform employees of asbestos standard (29 CFR 1910.1001). Exposure to asbestos, tremolite, anthophyllite, and actinolite in construction work is covered by 29 CFR 1926.58. ["OSHA is proposing an expanded requirement for a trained 'competent person' to ensure compliance with the standard on all construction operations involving asbestos, and requiring more stringent housekeeping to remove asbestos in general industry." (*Industrial Safety and Hygiene News*, 8/90).] Instruct employees in proper practices for handling asbestos-containing materials and correct use of protective equipment. Prevent or minimize asbestos exposure. Regulate areas where exposure in excess of the PEL is likely. Post warning signs in all regulated areas (see legend below). Work with asbestos only in a sufficient wet state to prevent emission of airborne fibers. Practice good personal hygiene and housekeeping procedures. Do not substitute personal protective equipment for proper handling and engineering controls. If exposures exceed the PEL, ensure employees wear appropriate protective clothing. Inhaling or ingesting asbestos fibers from contamined clothing or skin can be hazardous. Do not allow dusts and asbestos-containing wastes to accumulate. Institute a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Monitor work areas that expose employees to airborne concentrations at or above the action level (Sec. 2). Whenever production, process, control equipment, personnel, or work practices change, institute new monitoring. **Other Precautions:** Medical surveillance is required for all employees possibly exposed at or above the action level. Provide preplacement medical examination that includes complete medical and work history, complete physical examination that emphasizes respiratory and cardiovascular systems and digestive tract, the respiratory disease standardized questionnaire, a posterior-anterior 14" x 17" chest roentgenogram, and pulmonary function tests [FVC and FEV(1)]. Annual periodic medical examinations shall include all these elements and an abbreviated questionnaire. If it is 10+ years since first asbestos exposure, an individual should have a chest roentogram: every 5 years (ages 15 to 35), every 2 years (ages 35 to 45), every year (age 45+). Within 30 days of employment termination, an individual should receive a periodic medical examination with the elements listed above. Keep medical surveillance records for duration of employment, plus 30 years.

Transportation Data (49 CFR 172.101, .102)
DOT Shipping Name: Asbestos
DOT Hazard Class: ORM-C
ID No.: -
DOT Label: None
DOT Packaging Exceptions: 173.1090
DOT Packaging Requirements: 173.1090
Other Requirements: Stow and handle to avoid airborne particle
IMO Shipping Name: Asbestos, blue; asbestos, white
IMO Hazard Class: 9
ID No.: UN2212, UN2590
IMO Label: None
IMDG Packaging Group: II, III

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

***MSDS Collection* References:** 2-4, 6, 12, 14, 20, 26, 32, 38, 73, 89, 100, 101, 103, 124, 126, 127, 132, 133, 136, 138-140, 142, 143, 146, 148, 152, 153, 156-158
Prepared by: MJ Allison, BS; **Industrial Hygiene Review:** DJ Wilson, CIH; **Medical Review:** MJ Upfal, MD, MPH; **Edited by:** JR Stuart, MS

ATTACHMENT F-1

SAFETY-TRAINING MEETING RECORDS

ATTACHMENT 4

INTERNATIONAL TECHNOLOGY CORPORATION

TRAINING COURSE ATTENDANCE SHEET

No. _____

SUBJECT _____ *INSTRUCTOR(s)* _____

LOCATION _____ *DURATION* _____ *DATE* _____

	PLEASE PRINT	SIGNATURE	SOC. SECURITY NO.	P.C. NUMBER	OFFICE or COMPANY	TEST
	Jane Q. Doe		123 - 45 - 6789	1234567	Knox	85
	FIRST, MIDDLE I., LAST NAME					
1			- -			
2			- -			
3			- -			
4			- -			
5			- -			
6			- -			
7			- -			
8			- -			
9			- -			
10			- -			
11			- -			
12			- -			
13			- -			
14			- -			
15			- -			
16			- -			
17			- -			
18			- -			
19			- -			
20			- -			

FOR INSTRUCTOR / OFFICE USE ONLY

1	Hearing Protection	7	Personal Protective Equipment	
2	Embryo-Fetus	8	Motor Vehicle Operation	
3	Hazard Communication & Right-to-Know	9	8x10 Certificate	
4	Permit Required Confined Space	10	Employee Certification Wallet Card	
5	DOT General Awareness	11	Respirator Wallet Card	
6	Bloodborne Pathogens	12		

IT TAILGATE SAFETY MEETING

Division/Subsidiary _____ Facility _____

Date _____ Time _____ Job Number _____

Customer _____ Address: _____

Specific Location _____

Type of Work _____

Chemicals Used _____

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment _____

Chemical Hazards _____

Physical Hazards _____

Emergency Procedures _____

Hospital / Clinic _____ Phone ( ) _____ Paramedic Phone ( ) _____

Hospital Address _____

Special Equipment _____

Other _____

ATTENDEES

NAME PRINTED	SIGNATURE

Meeting conducted by:

_____ NAME PRINTED _____ SIGNATURE

Supervisor _____ Manager _____

INTERNATIONAL TECHNOLOGY CORPORATION

DAILY PROJECT SIGN-IN/SIGN-OUT AND VISITORS' LOG FOR CONTAMINATED AREA

ALL PERSONS ENTERING AND LEAVING WORK AREA MUST SIGN IN AND OUT

EMPLOYEE	EMP. NO.	TIME IN	TIME OUT	TIME IN	TIME OUT
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					

ATTACHMENT F-2

PERSONNEL TRAINING CERTIFICATION

PERSONNEL TRAINING/MEDICAL LOG*

Name	Representing	Medical exam date	40 Hr date	8 Hr Refresher date	8 Hr Supervisor date	SSHP date	First Aid/ CPR date	Other:

*Include copies of all training certificates in this Attachment.

ATTACHMENT G

EXPOSURE MONITORING/SAMPLING FORMS

INTERNATIONAL TECHNOLOGY CORPORATION

INTEGRATED AIR SAMPLING LOG

Project Name ______________________ Project Number ______________________

Date ____________ Sampled by __________________________ Sample Method ____________________

Target Compounds____

Sample No.	Employee/ Area Sampled	Job Title/Employee No./ Social Security No.	Pump Type/No.	Pre-Sample Flow Rate	Start Time	Stop Time	Total Time (Min)	Post Sample Flow Rate	Avg. Sample Flow Rate	Total Volume (Units)

Weather Conditions ____

Level of PPE (Specify) ____

Comments ____

____

____

____

____

____

IT INTERNATIONAL TECHNOLOGY CORPORATION

REAL TIME AIR MONITORING LOG

PROJECT NAME _____ LOCATION _____ PROJECT NO. _____

Date	Analyst	Time	Instrument (Mfg/Model/ Serial No.)	Calibration Date & Cpd.	Compound Measured	Span Set or Sens. Cal.	Conc. (Units)	Location/Activity/Comments

INTERNATIONAL TECHNOLOGY CORPORATION

COMBUSTIBLE GAS/OXYGEN METER CALIBRATION LOG

Project Name _____ Project No. _____

Date _____ Calibrated by _____

Instrument: Mfg/Model/Serial No. _____

Time	Battery Charged (Y/N)	Audible Alarm Check (Y/N)		Zero Checked (Y/N)		Calibration Standard	Calibration Standard (%)		Actual Meter Reading (%)		Ambient Air Rezero Check	
		LEL	O_2	LEL (0%)	O_2 (20.8%)		LEL	O_2	LEL	O_2	LEL (0%)	O_2 (20.8%)

Comments _____

Industrial Hygiene Monitoring Results

Sample No.	Date	Employee	Social Security #	Contaminant Monitored	Analytical Results	
					mg/m^3	ppm

Industrial Hygiene Instrument Calibration Log

Date	Type	Instrument		Collection Media	Before Sample Reading	Post Sample Reading	Average Reading	Initials
		ID No.	Setting					

Air Monitoring Results

Sample No.	Time (MIN)	Avg. Flow (L/MIN)	Volume (L)	Compound 1		Compound 2		Compound 3	
				NET WGT	CONC	NET WGT	CONC	NET WGT	CONC

Calculations/Comments:

Signature _____ Date _____

Industrial Hygiene Sampling Form

Date _____ Project _____

Site Location _____

CPDS Sampled _____

Collection Media _____

	PUMP		TIME					
Sample No.	No.	Flow Rate	Start	Stop	Total Time	Employee/Area	Job Title	S.S.No. or Employee I.D.

ENVIRONMENTAL DATA _____

OPERATION CONDITIONS _____

RESPIRATORY PROTECTION _____

PROTECTIVE CLOTHING _____

OBSERVATION/ACTIVITY _____

ATTACHMENT H

ENG. FORM 3394 - ACCIDENT REPORT

(For Safety Staff only)	REPORT NO.	EROC CODE	UNITED STATES ARMY CORPS OF ENGINEERS ACCIDENT INVESTIGATION REPORT (For Use of this Form See Attached Instructions and USACE Supp to AR 385-40)	REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)

1 ACCIDENT CLASSIFICATION

PERSONNEL CLASSIFICATION	INJURY/ILLNESS/FATAL	PROPERTY DAMAGE	MOTOR VEHICLE INVOLVED	DIVING
GOVERNMENT ☐ CIVILIAN ☐ MILITARY	☐	☐ FIRE INVOLVED ☐ OTHER	☐	☐
☐ CONTRACTOR	☐	☐ FIRE INVOLVED ☐ OTHER	☐	☐
☐ PUBLIC	☐ FATAL ☐ OTHER		☐	

2. PERSONAL DATA

a. NAME (Last,First,MI)	b. AGE	c. SEX ☐ MALE ☐ FEMALE	d. SOCIAL SECURITY NUMBER ___ ___ ___ / ___ ___ / ___ ___ ___ ___	e. GRADE

f. JOB SERIES/TITLE	g. DUTY STATUS AT TIME OF ACCIDENT	h. EMPLOYMENT STATUS AT TIME OF ACCIDENT
	☐ ON DUTY ☐ TDY ☐ OFF DUTY	☐ ARMY ACTIVE ☐ ARMY RESERVE ☐ VOLUNTEER ☐ PERMANENT ☐ FOREIGN NATIONAL ☐ SEASONAL ☐ TEMPORARY ☐ STUDENT ☐ OTHER (Specify)

3 GENERAL INFORMATION

a. DATE OF ACCIDENT (month/day/year) / /	b. TIME OF ACCIDENT (Military time))	c. EXACT LOCATION OF ACCIDENT	d. CONTRACTOR'S NAME (1) PRIME: (2) SUBCONTRACTOR:

e. CONTRACT NUMBER	f. TYPE OF CONTRACT	g. HAZARDOUS/TOXIC WASTE ACTIVITY
☐ CIVIL WORKS ☐ MILITARY ☐ OTHER (Specify)	☐ CONSTRUCTION ☐ SERVICE ☐ A/E ☐ DREDGE ☐ OTHER (Specify)	☐ SUPERFUND ☐ DERP ☐ IRP ☐ OTHER (Specify)

4 CONSTRUCTION ACTIVITIES ONLY (Fill in line and corresponding code number in box from list - see instructions)

a. CONSTRUCTION ACTIVITY	(CODE)	b. TYPE OF CONSTRUCTION EQUIPMENT	(CODE)

INJURY / ILLNESS INFORMATION (Include name on line and corresponding code number in box for items e, f & g - see instructions)

e. SEVERITY OF ILLNESS / INJURY (CODE)	b. ESTIMATED DAYS LOST	c. ESTIMATED DAYS HOSPITALIZED	d. ESTIMATED DAYS RESTRICTED DUTY

f. BODY PART AFFECTED	(CODE)	g. TYPE AND SOURCE OF INJURY/ILLNESS	(CODE)
PRIMARY			
SECONDARY		TYPE	
h. NATURE OF ILLNESS / INJURY	(CODE)	SOURCE	(CODE)

5 PUBLIC FATALITY (Fill in line and corresponding code number in box - see instructions)

a. ACTIVITY AT TIME OF ACCIDENT	(CODE)	b. PERSONAL FLOATATION DEVICE USED?
		☐ YES ☐ NO ☐ N/A

7 MOTOR VEHICLE ACCIDENT

a. TYPE OF VEHICLE	b. TYPE OF COLLISION	c. SEAT BELTS	USED	NOT USED	NOT AVAILABLE
☐☐ PICKUP/VAN ☐☐ AUTOMOBILE ☐☐ TRUCK ☐☐ OTHER (Specify)	☐ SIDE SWIPE ☐ HEAD ON ☐ REAR END ☐ BROADSIDE ☐ ROLL OVER ☐ BACKING ☐ OTHER (Specify)	(1) FRONT SEAT			
		(2) REAR SEAT			

8 PROPERTY/MATERIAL INVOLVED

a. NAME OF ITEM	b. OWNERSHIP	c. $ AMOUNT OF DAMAGE
(1)		
(2)		
(3)		

9 VESSEL / FLOATING PLANT ACCIDENT (Fill in line and corresponding code number in box from list - see instructions)

a. TYPE OF VESSEL/FLOATING PLANT	(CODE)	b. TYPE OF COLLISON/MISHAP	(CODE)

ACCIDENT DESCRIPTION (Use additional paper if necessary)

11. CAUSAL FACTOR(S) *(Read Instruction Before Completing)*

a. *(Explain YES answers in item 13)*	YES	NO
DESIGN: Was design of facility,workplace or equipment a factor?	☐	☐
INSPECTION/MAINTENANCE: Were inspection & maintenance procedures a factor?	☐	☐
PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor?	☐	☐
OPERATING PROCEDURES: Were operating procedures a factor?	☐	☐
JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred?	☐	☐
HUMAN FACTORS: Did any human factors such as, size or strength of person, etc.,contribute to accident?	☐	☐
ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc., contribute to the accident?	☐	☐

a. *(CONTINUED)*	YES	NO
CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust,fumes,mists,vapors or physical agents, such as, noise,radiation,etc.,contribute to accident?	☐	☐
OFFICE FACTORS: Did office setting such as, lifting office furniture,carrying,stooping,etc.,contribute to the accident?	☐	☐
SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task?	☐	☐
PERSONAL PROTECTIVE EQUIPMENT: Did the improper selection, use or maintenance of personal protective equipment contribute to the accident?	☐	☐
DRUGS/ALCOHOL: In your opinion,was drugs or alcohol a factor to the accident?	☐	☐

b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT?

☐ YES *(If yes, attach a copy.)* ☐ NO

12. TRAINING

a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK?	b. TYPE OF TRAINING.	c. DATE OF MOST RECENT FORMAL TRAINING.
☐ YES ☐ NO	☐ CLASSROOM ☐ ON JOB	/ / *(Month) (Day) (Year)*

13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT; INCLUDE DIRECT AND INDIRECT CAUSES *(See instruction for definition of direct and indirect causes.) (Use additional paper, if necessary)*

a. DIRECT CAUSE

b. INDIRECT CAUSE(S)

14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S).

DESCRIBE FULLY:

DATES FOR ACTIONS IDENTIFIED IN BLOCK 14.

a. BEGINNING *(Month/Day/Year)* / /	b. ANTICIPATED COMPLETION *(Month/Day/Year)* / /

c. SIGNATURE AND TITLE OF SUPERVISOR COMPLETING REPORT	d. DATE *(Mo/Da/Yr)*	e. ORGANIZATION IDENTIFIER *(Div, Br, Sect)*	f. OFFICE SYMBOL
CORPS _____	___ / ___ / ___		
CONTRACTOR _____	___ / ___ / ___		

16. MANAGEMENT REVIEW (1st).

a. ☐ CONCUR b. ☐ NON CONCUR c. COMMENTS

SIGNATURE	TITLE	DATE

17. MANAGEMENT REVIEW *(2nd - Chief Operations, Construction, Engineering, etc.)*

a. ☐ CONCUR b. ☐ NON CONCUR c. COMMENTS

SIGNATURE	TITLE	DATE

18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW

a. ☐ CONCUR b. ☐ NON CONCUR c. ADDITIONAL ACTIONS/COMMENTS.

SIGNATURE	TITLE	DATE

COMMAND APPROVAL

MENTS

COMMANDER SIGNATURE	DATE

GENERAL. Complete a separate report for each person who was *injured, caused, or contributed* to the accident (excluding uninjured personnel and witnesses). Use of this form for reporting USACE employee first-aid type injuries not submitted to the Office of Workers' Compensation Programs (OWCP) shall be at the descretion of the FOA commander. Please type or print legibly. Appropriate items shall be marked with an "X" in box(es). If additional space is needed, provide the information on a separate sheet and attach to the completed form. Ensure that these instructions are forwarded with the completed report to the designated management reviewers indicated in sections 16. and 17.

INSTRUCTIONS FOR SECTION 1 — ACCIDENT CLASSIFICATION. *(Mark All Boxes That Are Applicable.)*

a. GOVERNMENT. Mark "CIVILIAN" box if accident involved government civilian employee; mark "MILITARY" box if accident involved U.S. military personnel.

(1) INJURY/ILLNESS/FATALITY — Mark if accident resulted in any government civilian employee injury, illness, or fatality that requires the submission of OWCP Forms CA-1 (injury), CA-2 (illness), or CA-6 (fatality) to OWCP; mark if accident resulted in military personnel lost-time or fatal injury or illness.

(2) PROPERTY DAMAGE — Mark the appropriate box if accident resulted in any damage of $1000 or more to government property (including motor vehicles).

(3) VEHICLE INVOLVED — Mark if accident involved a motor vehicle, *regardless* of whether "INJURY/ILLNESS/FATALITY" or "PROPERTY DAMAGE" are marked.

(4) DIVING ACTIVITY — Mark if the accident involved an in-house USACE diving activity.

b. CONTRACTOR.

(1) INJURY/ILLNESS/FATALITY — Mark if accident resulted in any contractor lost-time injury/illness or fatality.

(2) PROPERTY DAMAGE — Mark the appropriate box if accident resulted in any damage of $1000 or more to contractor property (including motor vehicles).

(3) VEHICLE INVOLVED — Mark if accident involved a motor vehicle, *regardless* of whether "INJURY/ILLNESS/FATALITY" or "PROPERTY DAMAGE" are marked.

(4) DIVING ACTIVITY — Mark if the accident involved a USACE Contractor diving activity.

c. PUBLIC.

(1) INJURY/ILLNESS/FATALITY — Mark if accident resulted in public fatality or permanent total disability. (The "OTHER" box will be marked when requested by the FOA to report an unusual non-fatal public accident that could result in claims against the government or as otherwise directed by the FOA Commander).

(2) VOID SPACE — Make no entry.

(3) VEHICLE INVOLVED — Mark if accident resulted in a fatality to a member of the public and involved a motor vehicle, *regardless* of whether "INJURY/ILLNESS/FATALITY" is marked.

(4) VOID SPACE — Make no entry.

INSTRUCTIONS FOR SECTION 2 — PERSONAL DATA

a. NAME — (MANDATORY FOR GOVERNMENT ACCIDENTS. OPTIONAL AT THE DISCRETION OF THE FOA COMMANDER FOR CONTRACTOR AND PUBLIC ACCIDENTS). Enter last name, first name, middle initial of person involved.

b. AGE — Enter age.

c. SEX — Mark appropriate box.

d. SOCIAL SECURITY NUMBER — (FOR GOVERNMENT PERSONNEL ONLY) Enter the social security number (or other personal identification number if no social security number issued).

e. GRADE — (FOR GOVERNMENT PERSONNEL ONLY) Enter pay grade. Example: O-6; E-7; WG-8; WS-12; GS-11; etc.

f. JOB SERIES/TITLE — For *government civilian employees* enter the pay plan, full series number, and job title, e.g. GS-0810/Civil Engineer. For *military personnel* enter the primary military occupational specialty (PMOS), e.g., 15A30 or 11G50. For *contractor employees* enter the job title assigned to the injured person, e.g. carpenter, laborer, surveyor, etc.,

g. DUTY STATUS — Mark the appropriate box.

(1) ON DUTY — Person was at duty station during duty hours or person was away from duty station during duty hours but on official business at time of the accident.

(2) TDY - Person was on official business, away from the duty station and with travel orders at time of accident. Line-of-duty investigation required.

(3) OFF DUTY - Person was not on official business at time of accident

h. EMPLOYMENT STATUS — (FOR GOVERNMENT PERSONNEL ONLY) Mark the most appropriate box. If "OTHER" is marked, specify the employment status of the person.

INSTRUCTION FOR SECTION 3 — GENERAL INFORMATION

a. DATE OF ACCIDENT — Enter the month, day, and year of accident.

b. TIME OF ACCIDENT — Enter the local time of accident in military time. Example: 1430 hrs (not 2:30 p.m.).

c. EXACT LOCATION OF ACCIDENT — Enter facts needed to locate the accident scene. (installation/project name, building number, street, direction and distance from closest landmark, etc.,).

d. CONTRACTOR NAME

(1) PRIME — Enter the exact name (title of firm) of the prime contractor.

(2) SUBCONTRACTOR — Enter the name of any *subcontractor* involved in the accident.

e. CONTRACT NUMBER — Mark the appropriate box to identify if contract is civil works, military, or other: if "OTHER" is marked, specify contract appropriation on line provided. Enter complete contract number of prime contract, e.g., DACW 09-85-C-0100.

f. TYPE OF CONTRACT — Mark appropriate box. A/E means architect/engineer. If "OTHER" is marked, specify type of contract on line provided.

g. HAZARDOUS/TOXIC WASTE ACTIVITY (HTW) — Mark the box to identify the HTW activity being performed at the time of the accident. For Superfund, DERP, and Installation Restoration Program (IRP) HTW activities include accidents that occurred during inventory, predesign, design, and construction. For the purpose of accident reporting, DERP Formerly Used DoD Site (FUDS) activities and IRP activities will be treated separately. For Civil Works O&M HTW activities mark the "OTHER" box.

INSTRUCTIONS FOR SECTION 4 — CONSTRUCTION ACTIVITIES

a. CONSTRUCTION ACTIVITY — Select the *most appropriate* construction activity being performed at time of accident from the list below. Enter the activity name and place the corresponding code number identified in the box.

CONSTRUCTION ACTIVITY LIST

1. MOBILIZATION	14. ELECTRICAL
2. SITE PREPARATION	15. SCAFFOLDING/ACCESS
3. EXCAVATION/TRENCHING	16. MECHANICAL
4. GRADING (EARTHWORK)	17. PAINTING
5. PIPING/UTILITIES	18. EQUIPMENT/MAINTENANCE
6. FOUNDATION	19. TUNNELING
7. FORMING	20. WAREHOUSING/STORAGE
8. CONCRETE PLACEMENT	21. PAVING
9. STEEL ERECTION	22. FENCING
10. ROOFING	23. SIGNING
11. FRAMING	24. LANDSCAPING/IRRIGATION
12. MASONRY	25. INSULATION
13. CARPENTRY	26. DEMOLITION

b. TYPE OF CONSTRUCTION EQUIPMENT – Select the equipment involved in the accident from the list below. Enter the name and place the corresponding code number identified in the box. If equipment is not included below, use code 24, "OTHER", and write in specific type of equipment.

CONSTRUCTION EQUIPMENT

1. GRADER
2. DRAGLINE
3. CRANE (ON VESSEL/BARGE)
4. CRANE (TRACKED)
5. CRANE (RUBBER TIRE)
6. CRANE (VEHICLE MOUNTED)
7. CRANE (TOWER)
8. SHOVEL
9. SCRAPER
10. PUMP TRUCK (CONCRETE)
11. TRUCK (CONCRETE/TRANSIT MIXER)
12. DUMP TRUCK (HIGHWAY)
13. DUMP TRUCK (OFF HIGHWAY)
14. TRUCK (OTHER)
15. FORKLIFT
16. BACKHOE
17. FRONT-END LOADER
18. PILE DRIVER
19. TRACTOR (UTILITY)
20. MANLIFT
21. DOZER
22. DRILL RIG
23. COMPACTOR/VIBRATORY ROLLER
24. OTHER

INSTRUCTIONS FOR SECTION 5 – INJURY/ILLNESS INFORMATION

a. SEVERITY OF INJURY / ILLNESS - Reference para 2-10 of USACE Suppl 1 to AR 385-40 and enter code and description from list below.

NOI	NO INJURY
FAT	FATALITY
PTL	PERMANENT TOTAL DISABILITY
PPR	PERMANENT PARTIAL DISABILITY
LWD	LOST WORKDAY CASE INVOLVING DAYS AWAY FROM WORK
NLW	RECORDABLE CASE WITHOUT LOST WORKDAYS
RFA	RECORDABLE FIRST AID CASE
NRI	NON-RECORDABLE INJURY

b. ESTIMATED DAYS LOST – Enter the estimated number of workdays the person will lose from work.

ESTIMATED DAYS HOSPITALIZED – Enter the estimated number of workdays the person will be hospitalized.

d. ESTIMATED DAYS RESTRICTED DUTY – Enter the estimated number of workdays the person, as a result of the accident, will not be able to perform all of their regular duties.

e. BODY PART AFFECTED – Select the most appropriate primary and when applicable, secondary body part affected from the list below. Enter body part name on line and place the corresponding code letters identifying that body part in the box.

GENERAL BODY AREA	CODE	BODY PART NAME
ARM/WRIST	AB	ARM AND WRIST
	AS	ARM OR WRIST
TRUNK, EXTERNAL MUSCULATURE	B1	SINGLE BREAST
	B2	BOTH BREASTS
	B3	SINGLE TESTICLE
	B4	BOTH TESTICLES
	BA	ABDOMEN
	BC	CHEST
	BL	LOWER BACK
	BP	PENIS
	BS	SIDE
	BU	UPPER BACK
	BW	WAIST
	BZ	TRUNK OTHER
HEAD, INTERNAL	C1	SINGLE EAR INTERNAL
	C2	BOTH EARS INTERNAL
	C3	SINGLE EYE INTERNAL
	C4	BOTH EYES INTERNAL
	CB	BRAIN
	CC	CRANIAL BONES
	CD	TEETH
	CJ	JAW
	CL	THROAT, LARYNX
	CM	MOUTH
	CN	NOSE
	CR	THROAT, OTHER
	CT	TONGUE
	CZ	HEAD OTHER INTERNAL
ELBOW	EB	BOTH ELBOWS
	ES	SINGLE ELBOW
FINGER	F1	FIRST FINGER
	F2	BOTH FIRST FINGERS
	F3	SECOND FINGER
	F4	BOTH SECOND FINGERS
	F5	THIRD FINGER
	F6	BOTH THIRD FINGERS
	F7	FOURTH FINGER
	F8	BOTH FOURTH FINGERS
TOE	G1	GREAT TOE
	G2	BOTH GREAT TOES
	G3	TOE OTHER
	G4	TOES OTHER
HEAD, EXTERNAL	H1	EYE EXTERNAL
	H2	BOTH EYES EXTERNAL
	H3	EAR EXTERNAL
	H4	BOTH EARS EXTERNAL
	HC	CHIN
	HF	FACE
	HK	NECK/THROAT
	HM	MOUTH/LIPS
	HN	NOSE
	HS	SCALP
KNEE	KB	BOTH KNEES
	KS	KNEE
LEG, HIP, ANKLE, BUTTOCK	LB	BOTH LEGS/HIPS/ ANKLES/BUTTOCKS
	LS	SINGLE LEG/HIP ANKLE/BUTTOCK
HAND	MB	BOTH HANDS
	MS	SINGLE HAND
FOOT	PB	BOTH FEET
	PS	SINGLE FOOT
TRUNK, BONES	R1	SINGLE COLLAR BONE
	R2	BOTH COLLAR BONES
	R3	SHOULDER BLADE
	R4	BOTH SHOULDER BLADES
	RB	RIB
	RS	STERNUM (BREAST BONE)
	RV	VERTEBRAE (SPINE; DISC)
	RZ	TRUNK BONES OTHER
SHOULDER	SB	BOTH SHOULDERS
	SS	SINGLE SHOULDER
THUMB	TB	BOTH THUMBS
	TS	SINGLE THUMB
TRUNK, INTERNAL ORGANS	V1	LUNG, SINGLE
	V2	LUNGS, BOTH
	V3	KIDNEY, SINGLE
	V4	KIDNEYS, BOTH
	VH	HEART
	VL	LIVER
	VR	REPRODUCTIVE ORGANS
	VS	STOMACH
	VV	INTESTINES
	VZ	TRUNK, INTERNAL, OTHER

f. NATURE OF INJURY/ILLNESS - Select the most appropriate nature of injury / illness from the list below. This nature of injury / illness shall correspond to the primary body part selected in 5e, above. Enter the nature of injury / illness name on the line and place the corresponding CODE letters in the box provided.

* The injury or condition selected below must be caused by a specific incident or event which occurred during a single work day or shift.

GENERAL NATURE CATEGORY	CODE	NATURE OF INJURY NAME
*MATIC INJURY OR BILITY	TA	AMPUTATION
	TB	BACK STRAIN.
	TC	CONTUSION; BRUISE; ABRASION
	TD	DISLOCATION
	TF	FRACTURE
	TH	HERNIA
	TK	CONCUSSION
	TL	LACERATION, CUT
	TP	PUNCTURE
	TS	STRAIN, MULTIPLE
	TU	BURN, SCALD, SUNBURN
	TI	TRAUMATIC SKIN DISEASES/ CONDITIONS INCLUDING DERMATITIS
	TR	TRAUMATIC RESPIRATORY DISEASE
	TQ	TRAUMATIC FOOD POISONING
	TW	TRAUMATIC TUBERCULOSIS
	TX	TRAUMATIC VIROLOGICAL/ INFECTIVE/PARASITIC DISEASE
	T1	TRAUMATIC CEREBRAL VASCULAR CONDITION/STROKE
	T2	TRAUMATIC HEARING LOSS
	T3	TRAUMATIC HEART CONDITION
	T4	TRAUMATIC MENTAL DISORDER; STRESS; NERVOUS CONDITION
	T8	TRAUMATIC INJURY – OTHER (EXCEPT DISEASE, ILLNESS)

** A nontraumatic physiological harm or loss of capacity produced by systemic infection; continued or repeated stress or strain; exposure to toxins, poisons, fumes, etc.; or other continued and repeated exposures to conditions of the work environment over a long period of time. For practical purposes, an occupational illness/disease or disability is any reported condition which does not meet the definition of traumatic injury or disability as described above.

GENERAL NATURE CATEGORY	CODE	NATURE OF INJURY NAME
**NON-TRAUMATIC ILLNESS/DISEASE OR DISABILITY		
RESPIRATORY DISEASE	RA	ASBESTOSIS
	RB	BRONCHITIS
	RE	EMPHYSEMA
	RP	PNEUMOCONIOSIS
	RS	SILICOSIS
	R9	RESPIRATORY DISEASE, OTHER
VIROLOGICAL, INFECTIVE & PARASITIC DISEASES	VB	BRUCELLOSIS
	VC	COCCIDIOMYCOSIS
	VF	FOOD POISONING
	VH	HEPATITIS
	VM	MALARIA
	VS	STAPHYLOCOCCUS
	VT	TUBERCULOSIS
	V9	VIROLOGICAL/INFECTIVE/ PARASITIC – OTHER
DISABILITY, OCCUPATIONAL	DA	ARTHRITIS, BURSITIS
	DB	BACK STRAIN, BACK SPRAIN
	DC	CEREBRAL VASCULAR CONDITION; STROKE
	DD	ENDEMIC DISEASE (OTHER THAN CODE TYPES R&S)
	DE	EFFECT OF ENVIRONMENTAL CONDITION
	DH	HEARING LOSS
	DK	HEART CONDITION
	DM	MENTAL DISORDER, EMOTIONAL STRESS NERVOUS CONDITION
	DR	RADIATION
	DS	STRAIN, MULTIPLE
	DU	ULCER
	DV	OTHER VASCULAR CONDITIONS
	D9	DISABILITY, OTHER
SKIN DISEASE OR CONDITION	SB	BIOLOGICAL
	SC	CHEMICAL
	S9	DERMATITIS, UNCLASSIFIED

g. TYPE AND SOURCE OF INJURY/ILLNESS (CAUSE) - Type and Source Codes are used to describe what caused the incident. The Type Code stands for an ACTION and the Source Code for an OBJECT or SUBSTANCE. Together, they form a brief description of how the incident occurred. Where there are two different sources, code the initiating source of the incident (see example 1, below). Examples:

(1) An employee tripped on carpet and struck his head on a desk.
TYPE: 210 (fell on same level) SOURCE: 0110 (walking/working surface)

NOTE: This example would NOT be coded 120 (struck against) and 0140 (furniture).

(2) A Park Ranger contracted dermatitis from contact with poison ivy/ oak.
TYPE: 510 (contact) SOURCE: 0920 (plant)

(3) A lock and dam mechanic punctured his finger with a metal sliver while grinding a turbine blade.
TYPE: 410 (punctured by) SOURCE: 0830 (metal)

(4) An employee was driving a government vehicle when it was struck by another vehicle.
TYPE: 800 (traveling in) SOURCE: 0421 (government-owned vehicle, as driver)

NOTE: The Type Code 800, "Traveling In" is different from the other type codes in that its function is not to identify factors contributing to the injury or fatality, but rather to collect data on the type of vehicle the employee was operating or traveling in at the time of the incident.

Select the most appropriate TYPE and SOURCE identifier from the list below and enter the name on the line and the corresponding code in the appropriate box.

CODE	TYPE OF INJURY NAME
	STRUCK
0110	STRUCK BY
0111	STRUCK BY FALLING OBJECT
0120	STRUCK AGAINST
	FELL, SLIPPED, TRIPPED
0210	FELL ON SAME LEVEL
0220	FELL ON DIFFERENT LEVEL
0230	SLIPPED, TRIPPED (NO FALL)
	CAUGHT
0310	CAUGHT ON
0320	CAUGHT IN
0330	CAUGHT BETWEEN
	PUNCTURED, LACERATED
0410	PUNCTURED BY
0420	CUT BY
0430	STUNG BY
0440	BITTEN BY
	CONTACTED
0510	CONTACTED WITH (INJURED PERSON MOVING)
0520	CONTACTED BY (OBJECT WAS MOVING)
	EXERTED
0610	LIFTED, STRAINED BY (SINGLE ACTION)
0620	STRESSED BY (REPEATED ACTION)
	EXPOSED
0710	INHALED
0720	INGESTED
0730	ABSORBED
0740	EXPOSED TO
0800	TRAVELING IN

CODE	SOURCE OF INJURY NAME
0100	BUILDING OR WORKING AREA
0110	WALKING/WORKING SURFACE (FLOOR, STREET, SIDEWALKS, ETC)
0120	STAIRS, STEPS
0130	LADDER
0140	FURNITURE, FURNISHINGS, OFFICE EQUIPMENT
0150	BOILER, PRESSURE VESSEL
0160	EQUIPMENT LAYOUT (ERGONOMIC)
0170	WINDOWS, DOORS
0180	ELECTRICITY

* U.S. GOVERNMENT PRINTING OFFICE 1993–758-900

CODE	SOURCE OF INJURY NAME
0200	ENVIRONMENTAL CONDITION
0210	TEMPERATURE EXTREME (INDOOR)
0220	WEATHER (ICE, RAIN, HEAT, ETC.)
0230	FIRE, FLAME, SMOKE (NOT TOBACCO)
0240	NOISE
0250	RADIATION
0260	LIGHT
0270	VENTILATION
0271	TOBACCO SMOKE
0280	STRESS (EMOTIONAL)
0290	CONFINED SPACE
0300	MACHINE OR TOOL
0310	HAND TOOL (POWERED: SAW, GRINDER, ETC.)
0320	HAND TOOL (NONPOWERED)
0330	MECHANICAL POWER TRANSMISSION APPARATUS
0340	GUARD, SHIELD (FIXED, MOVEABLE, INTERLOCK)
0350	VIDEO DISPLAY TERMINAL
0360	PUMP, COMPRESSOR, AIR PRESSURE TOOL
0370	HEATING EQUIPMENT
0380	WELDING EQUIPMENT
0400	VEHICLE
0411	AS DRIVER OF PRIVATELY OWNED/RENTAL VEHICLE
0412	AS PASSENGER OF PRIVATELY OWNED/RENTAL VEHICLE
0421	DRIVER OF GOVERNMENT VEHICLE
0422	PASSENGER OF GOVERNMENT VEHICLE
0430	COMMON CARRIER (AIRLINE, BUS, ETC.)
0440	AIRCRAFT (NOT COMMERCIAL)
0450	BOAT, SHIP, BARGE
0500	MATERIAL HANDLING EQUIPMENT
0510	EARTHMOVER (TRACTOR, BACKHOE, ETC.)
0520	CONVEYOR (FOR MATERIAL AND EQUIPMENT)
0530	ELEVATOR, ESCALATOR, PERSONNEL HOIST
0540	HOIST, SLING CHAIN, JACK
0550	CRANE
0551	FORKLIFT
0560	HANDTRUCK, DOLLY
0600	DUST, VAPOR, ETC.
0610	DUST (SILICA, COAL, ETC.)
0620	FIBERS
0621	ASBESTOS
0630	GASES
0631	CARBON MONOXIDE
0640	MIST, STEAM, VAPOR, FUME
0641	WELDING FUMES
0650	PARTICLES (UNIDENTIFIED)
0700	CHEMICAL, PLASTIC, ETC.
0711	DRY CHEMICAL—CORROSIVE
0712	DRY CHEMICAL—TOXIC
0713	DRY CHEMICAL—EXPLOSIVE
0714	DRY CHEMICAL—FLAMMABLE
0721	LIQUID CHEMICAL—CORROSIVE
0722	LIQUID CHEMICAL—TOXIC
0723	LIQUID CHEMICAL—EXPLOSIVE
0724	LIQUID CHEMICAL—FLAMMABLE
0730	PLASTIC
0740	WATER
0750	MEDICINE
0800	INANIMATE OBJECT
0810	BOX, BARREL, ETC.
0820	PAPER
0830	METAL ITEM, MINERAL
0831	NEEDLE
0840	GLASS
0850	SCRAP, TRASH
0860	WOOD
0870	FOOD
0880	CLOTHING, APPAREL, SHOES
0900	ANIMATE OBJECT
0911	DOG
0912	OTHER ANIMAL
0920	PLANT
0930	INSECT
0940	HUMAN (VIOLENCE)
0950	HUMAN (COMMUNICABLE DISEASE)
0960	BACTERIA, VIRUS (NOT HUMAN CONTACT)

CODE	SOURCE OF INJURY NAME
1000	PERSONAL PROTECTIVE EQUIPMENT
1010	PROTECTIVE CLOTHING, SHOES, GLASSES, GOGGLES
1020	RESPIRATOR, MASK
1021	DIVING EQUIPMENT
1030	SAFETY BELT, HARNESS
1040	PARACHUTE

INSTRUCTIONS FOR SECTION 6 — PUBLIC FATALITY

a. ACTIVITY AT TIME OF ACCIDENT — Select the activity being performed at the time of the accident from the list below. Enter the activity name on the line and the corresponding number in the box. If the activity performed is not identified on the list, select from the *most* appropriate primary activity area (water related, non-water related or other activity), the code number for "Other", and write in the activity being performed at the time of the accident.

WATER RELATED RECREATION

1. Sailing
2. Boating—powered
3. Boating—unpowered
4. Water skiing
5. Fishing from boat
6. Fishing from bank dock or pier
7. Fishing while wading
8. Swimming/supervised area
9. Swimming/designated area
10. Swimming/other area
11. Underwater activities (skin diving, scuba, etc.)
12. Wading
13. Attempted rescue
14. Hunting from boat
15. Other

NON-WATER RELATED RECREATION

16. Hiking and walking
17. Climbing (general)
18. Camping/picnicking authorized area
19. Camping/picnicking unauthorized area
20. Guided tours
21. Hunting
22. Playground equipment
23. Sports/summer (baseball, football, etc.)
24. Sports/winter (skiing, sledding, snowmobiling etc.)
25. Cycling (bicycle, motorcycle, scooter)
26. Gliding
27. Parachuting
28. Other non-water related

OTHER ACTIVITIES

29. Unlawful acts (fights, riots, vandalism, etc.)
30. Food preparation-serving
31. Food consumption
32. Housekeeping
33. Sleeping
34. Pedestrian struck by vehicle
35. Pedestrian other acts
36. Suicide
37. "Other" activities

b. PERSONAL FLOTATION DEVICE USED — If fatality was water-related was the victim wearing a person flotation device? Mark the appropriate box.

INSTRUCTIONS FOR SECTION 7 — MOTOR VEHICLE ACCIDENT

a. TYPE OF VEHICLE — Mark appropriate box for each vehicle involved. If more than one vehicle of the same type is involved, mark both halves of the appropriate box. USACE vehicle(s) involved shall be marked in left half of appropriate box.

b. TYPE OF COLLISION — Mark appropriate box.

c. SEAT BELT — Mark appropriate box.

INSTRUCTIONS FOR SECTION 8 — PROPERTY/ MATERIAL INVOLVED

a. NAME OF ITEM — Describe all property involved in accident. Property/material involved means material which is damaged or whose use or misuse contributed to the accident. Include the name, type, model; also include the National Stock Number (NSN) whenever applicable.

b. OWNERSHIP — Enter ownership for each item listed. Enter one of the following: *USACE; OTHER GOVERNMENT; CONTRACTOR; PRIVATE)*

c. $ AMOUNT OF DAMAGE — Enter the total estimated dollar amount of damage (parts and labor), if any.

INSTRUCTIONS FOR SECTION 9—VESSEL/ FLOATING PLANT ACCIDENT

a. TYPE OF VESSEL/FLOATING PLANT—Select the most appropriate vessel/floating plant from list below. Enter name and place corresponding number in box. If item is not listed below, enter item number for "OTHER" and write in specific type of vessel/ floating plant.

VESSEL/FLOATING PLANTS

1. ROW BOAT
2. SAIL BOAT
3. MOTOR BOAT
4. BARGE
5. DREDGE/HOPPER
6. DREDGE/SIDE CASTING
7. DREDGE/DIPPER
8. DREDGE/CLAMSHELL BUCKET
9. DREDGE/PIPE LINE
10. DREDGE/DUST PAN
11. TUG BOAT
12. OTHER

b. COLLISION/MISHAP—Select from the list below the object(s) that contributed to the accident or were damaged in the accident.

COLLISION/MISHAP

1. COLLISION W/OTHER VESSEL
2. UPPER GUIDE WALL
3. UPPER LOCK GATES
4. LOCK WALL
5. LOWER LOCK GATES
6. LOWER GUIDE WALL
7. HAULAGE UNIT
8. BREAKING TOW
9. TOW BREAKING UP
10. SWEPT DOWN ON DAM
11. BUOY/DOLPHIN/CELL
12. WHARF OR DOCK
13. OTHER

INSTRUCTIONS FOR SECTION 10—ACCIDENT DESCRIPTION

DESCRIBE ACCIDENT—Fully describe the accident. Give the sequence of events that describe what happened leading up to and including the accident. Fully identify personnel and equipment involved and their role(s) in the accident. Ensure that relationships between personnel and equipment are clearly specified. Continue on blank sheets if necessary and attach to this report.

INSTRUCTIONS FOR SECTION 11—CAUSAL FACTORS

a. Review thoroughly. Answer each question by marking the appropriate block. If any answer is yes, explain in item 13 below. Consider, as a minimum, the following:

(1) DESIGN—Did inadequacies associated with the building or work site play a role? Would an improved design or layout of the equipment or facilities reduce the likelihood of similar accidents? Were the tools or other equipment designed and intended for the task at hand?

(2) INSPECTION/MAINTENANCE—Did inadequately or improperly maintained equipment, tools, workplace, etc. create or worsen any hazards that contributed to the accident? Would better equipment, facility, work site or work activity inspections have helped avoid the accident?

(3) PERSON'S PHYSICAL CONDITION—Do you feel that the accident would probably not have occurred if the employee was in "good" physical condition? If the person involved in the accident had been in better physical condition, would the accident have been less severe or avoided altogether? Was over exertion a factor?

(4) OPERATING PROCEDURES—Did a lack of or inadequacy within established operating procedures contribute to the accident? Did any aspect of the procedures introduce any hazard to, or increase the risk associated with the work process? Would establishment or improvement of operating procedures reduce the likelihood of similar accidents?

(5) JOB PRACTICES—Were any of the provisions of the Safety and Health Requirements Manual (EM 385-1-1) violated? Was the task being accomplished in a manner which was not in compliance with an established job hazard analysis or activity hazard analysis? Did any established job practice (including EM 385-1-1) fail to adequately address the task or work process? Would better job practices improve the safety of the task?

(6) HUMAN FACTORS—Was the person under undue stress (either internal or external to the job)? Did the task tend toward overloading the capabilities of the person: i.e., did the job require tracking and reacting to many external inputs such as displays, alarms, or signals? Did the arrangement of the workplace tend to interfere with efficient task performance? Did the task require reach, strength, endurance, agility, etc., at or beyond the capabilities of the employee? Was the work environment ill-adapted to the person? Did the person need more training, experience, or practice in doing the task? Was the person inadequately rested to perform safely?

(7) ENVIRONMENTAL FACTORS—Did any factors such as moisture, humidity, rain, snow, sleet, hail, ice, fog, cold, heat, sun, temperature changes, wind, seas, floods, currents, dust, mud, glare, pressure changes, lightning, etc., play a part in the accident?

(8) CHEMICAL AND PHYSICAL AGENT FACTORS—Did exposure to chemical agents (either single shift exposure or long-term exposure) such as dusts, fibers (asbestos, etc.), silica, gases (carbon monoxide, chlorine, etc.), mists, steam, vapors, fumes, smoke, other particulates, liquid or dry chemicals that are corrosive, toxic, explosive or flammable, by-products of combustion or physical agents such as noise, ionizing radiation, non-ionizing radiation (UV radiation created during welding, etc.) contribute to the accident/incident?

(9) OFFICE FACTORS—Did the fact that the accident occurred in an office setting or to an office worker have a bearing on its cause? For example, office workers tend to have less experience and training in performing tasks such as lifting office furniture. Did physical hazards within the office environment contribute to the hazard?

(10) SUPPORT FACTORS—Was the person using an improper tool for the job? Was inadequate time available or utilized to safely accomplish the task? Were less than adequate personnel resources (in terms of employee skills, number of workers, and adequate supervision) available to get the job done properly? Was funding available, utilized, and adequate to provide proper tools, equipment, personnel, site preparation, etc?

(11) PERSONAL PROTECTIVE EQUIPMENT—Did the person fail to use appropriate personal protective equipment (gloves, eye protection, hard-toed shoes, respirator, etc.) for the task or environment? Did protective equipment provided or worn fail to provide adequate protection from the hazard(s)? Did lack of or inadequate maintenance of protective gear contribute to the accident?

(12) DRUGS/ALCOHOL—Is there any reason to believe the person's mental or physical capabilities, judgement, etc., were impaired or altered by the use of drugs or alcohol? Consider the effects of prescription medicine and over the counter medications as well as illicit drug use. Consider the effect of drug or alcohol induced "hangovers".

b. WRITTEN JOB/ACTIVITY HAZARD ANALYSIS—Was a written Job/Activity Hazard Analysis completed for the task being performed at the time of the accident? Mark the appropriate box. *If one was performed, attach a copy of the analysis to the report.*

INSTRUCTIONS FOR SECTION 12—TRAINING

a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK?—For the purpose of this section "trained" means the person has been provided the necessary information (either formal and/or on-the-job (OJT) training) to competently perform the activity/task in a safe and healthful manner.

b. TYPE OF TRAINING—Mark the appropriate box that best indicates the type of training; (classroom or on-the-job) that the injured person received before the accident happened.

c. DATE OF MOST RECENT TRAINING—Enter the month, day, and year of the last *formal* training completed that covered the activity-task being performed at the time of the accident.

INSTRUCTIONS FOR SECTION 13—CAUSES

a. DIRECT CAUSES—The direct cause is that single factor which most directly lead to the accident. See examples below.

b. INDIRECT CAUSES—Indirect causes are those factors which contributed to but did not directly initiate the occurrence of the accident.

Examples for section 13:

a. Employee was dismantling scaffold and fell 12 feet from unguarded opening.
Direct cause: failure to provide fall protection at elevation.
Indirect causes: failure to enforce USACE safety requirements; improper training/motivation of employee (possibility that employee was not knowledgeable of USACE fall protection requirements or was lax in his attitude towards safety); failure to ensure provision of positive fall protection whenever elevated; failure to address fall protection during scaffold dismantling in phase hazard analysis.

b. Private citizen had stopped his vehicle at intersection for red light when vehicle was struck in rear by USACE vehicle. (note USACE vehicle was in proper/safe working condition).
Direct cause: failure of USACE driver to maintain control of and stop USACE vehicle within safe distance.
Indirect cause: Failure of employee to pay attention to driving (defensive driving).

INSTRUCTIONS FOR SECTION 14—ACTION TO ELIMINATE CAUSE(S)

DESCRIPTION—Fully describe all the actions taken, anticipated, and recommended to eliminate the cause(s) and prevent reoccurrence of similar accidents/illnesses. Continue on blank sheets of paper if necessary to fully explain and attach to the completed report form.

INSTRUCTIONS FOR SECTION 15—DATES FOR ACTION

a. BEGIN DATE—Enter the date when the corrective action(s) identified in Section 14 will begin.

b. COMPLETE DATE—Enter the date when the corrective action(s) identified in Section 14 will be completed.

c. TITLE AND SIGNATURE—Enter the title and signature of supervisor completing the accident report. For a GOVERNMENT employee accident/illness the immediate supervisor will complete and sign the report. For PUBLIC accidents the USACE Project Manager/Area Engineer responsible for the USACE property where the accident happened shall complete and sign the report. For CONTRACTOR accidents the Contractor's project manager shall complete and sign the report and provide to the USACE supervisor responsible for oversight of that contractor activity. This USACE Supervisor shall also sign the report. Upon entering the information required in 15.d, 15.e and 15.f below, the responsible USACE supervisor shall forward the report for management review as indicated in Section 16.

d. DATE SIGNED—Enter the month, day, and year that the report was signed by the responsible supervisor.

e. ORGANIZATION NAME—For GOVERNMENT employee accidents enter the USACE organization name (Division, Branch, Section, etc.) of the injured employee. For PUBLIC accidents enter the USACE organization name for the person identified in block 15.c. For CONTRACTOR accidents enter the USACE organization name for the USACE office responsible for providing contract administration oversight.

f. OFFICE SYMBOL—Enter the latest complete USACE Office Symbol for the USACE organization identified in block 15.e.

INSTRUCTIONS FOR SECTION 16—MANAGEMENT REVIEW (1st)

1ST REVIEW—Each USACE FOA shall determine who will provide 1st management review. The responsible USACE supervisor in section 15.c shall forward the completed report to the USACE office designated as the 1st Reviewer by the FOA. Upon receipt, the Chief of the Office shall review the completed report, mark the appropriate box, provide substantive comments, sign, date, and forward to the FOA Staff Chief (2nd review) for review and comment.

INSTRUCTIONS FOR SECTION 17—MANAGEMENT REVIEW (2nd)

2ND REVIEW—The FOA Staff Chief (i.e., FOA Chief of Construction, Operations, Engineering, Planning, etc.) shall mark the appropriate box, review the completed report, provide substantive comments, sign, date, and return to the FOA Safety and Occupational Health Office.

INSTRUCTIONS FOR SECTION 18—SAFETY AND OCCUPATIONAL HEALTH REVIEW

3RD REVIEW—The FOA Safety and Occupational Health Office shall review the completed report, mark the appropriate box, ensure that any inadequacies, discrepancies, etc, are rectified by the responsible supervisor and management reviewers, provide substantive comments, sign, date and forward to the FOA Commander for review, comment, and signature.

INSTRUCTION FOR SECTION 19—COMMAND APPROVAL

4TH REVIEW—The FOA Commander shall (to include the person designated Acting Commander in his absence) review the completed report, comment if required, sign, date, and forward the report to the FOA Safety and Occupational Health Office. Signature authority shall not be delegated.

ATTACHMENT I

IT ACCIDENT/INJURY REPORTS

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SUPERVISOR'S EMPLOYEE INJURY REPORT

This is an official document to be initiated by the employee's supervisor. Please answer all questions completely. This report must be forwarded to the employee's Regional Health and Safety office within 24 hours of the injury.

Injured's Name_____ Sex____ S.S. No._____ Birthdate_____

Home Address_____

City_____ State_____ Zip_____ Phone(_____)_____

Job title_____ Hire Date_____ Hourly wage_____

SUPERVISOR

Date of incident_____ Time_____ Time reported_____ To whom?_____

Project name_____ Project #_____ Time shift began_____

Exact location of the incident_____ Did the employee leave work? ☐ No ☐ Yes When_____

Has employee returned to work? ☐ No ☐ Yes When_____ Did employee miss a regularly scheduled shift? ☐ No ☐ Yes

Doctor/Hospital name_____ Address_____

Witness name(s)_____ Statement attached? ☐ No ☐ Yes

Nature of injury_____ Exact body part_____

Medical attention: ☐ None ☐ First aid on site ☐ Doctor's office ☐ Hospital ER ☐ Hospitalized

Job assignment at time of incident_____ Job:_____ Phase:_____ Task:_____ Subtask:_____

Describe incident_____

What unsafe physical condition or unsafe act caused the incident?_____

What corrective action has been taken to prevent recurrence?_____

Supervisor/Foreman _____ (Print) _____ Signature _____ Date

Project Manager _____ (Print) _____ Signature _____ Date

Site Safety Officer _____ (Print) _____ Signature _____ Date

MANAGER

Comments on incident and corrective action_____

Manager's name _____ (Print) _____ Signature _____ Date

HEALTH AND SAFETY

Concur with action taken? ☐ No ☐ Yes Remarks_____

OSHA Classification:

☐ Incident only ☐ First aid ☐ Recordable, no lost/restricted workdays ☐ Lost workdays ☐ Restricted activity ☐ Fatality

Days away from work_____ Days restricted work_____ Total days charged_____

Name _____ (Print) _____ Signature _____ Date

HS020A-1-15-96 Submit copies to: National HS, Corporate Risk Mgmt., Region HS, Project Mgr., and EMR

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IT CORPORATION WORKERS COMPENSATION ACCIDENT CODING

A. TYPE OF INJURY OR ILLNESS

10 Laceration
12 Puncture
14 Contusion
16 Abrasion
18 Crushing Injury
20 Foreign Body
22 Burn-Thermal
24 Burn-Chemical
26 Fracture
28 Amputation
30 Hernia-Inguinal
31 Hernia-Other
32 Strain
34 Sprain
36 Dislocation
38 Heat Exhaustion/Heat Stress
40 Drowning
42 Asphyxiation
44 Systemic Poisoning
46 Dermatitis
48 Inflammation-irritation
49 Pneumoconiosis
50 Respiratory Condition Due to Toxic Agents
[illegible] Radiation
[illegible] Heart Disease
[illegible] Liver Damage
[illegible] Kidney Damage
58 Mental Stress Psychiatric
60 Repeated Trauma
62 Hearing Loss
64 Cancer
66 Other Occupational Disease
68 Fatality
[illegible] Infectious Respiratory Disease
72 Misc Not Otherwise Coded
74 Not Work Related

B. INJURED BODY PARTS

[illegible] Head
[illegible] Face
[illegible] Eye
[illegible] Nose
[illegible] Teeth Mouth
[illegible] Neck
[illegible] Shoulder
[illegible] Upper Arm
[illegible] Elbow
32 Lower Arm
[illegible] Wrist
[illegible] Hand
[illegible] Finger
[illegible] Back Spine
44 Hip Pelvis
46 Thigh
48 Knee
51 Lower Leg
52 Ankle
54 Foot
56 Multiple
58 Toes
60 Lungs
62 Heart
63 Liver
64 Other Internal Organs
66 Psyche
69 Not Otherwise Coded

C. ACTIVITY AT TIME OF ACCIDENT

[illegible] Driving
[illegible] Operating Heavy Equipment
[illegible] Not Work
[illegible] Hydroblasting
[illegible] Welding
[illegible] Cutting
[illegible] Lifting or Manual Carrying
24 Working
26 Running
28 Jumping
30 Hammering
32 Sampling
34 Loading/Unloading Vacuum Trucks
36 Pulling Vacuum Hoses
38 Climbing
40 Shoveling
41 Sweeping
42 Pulling
44 Pushing
46 Cleaning or Caring
48 Reaching or Stretching
50 Standing, Observing or Inspecting
52 Piling or Stacking
54 Maintenance
56 Training
58 Chemical Packaging
60 Laboratory Analysis
62 Washing Glassware
64 Tank Cleaning
66 Asbestos removal
68 Nuclear Decontamination
70 Drilling
72 Pond Maintenance
74 Using Hand Tools
76 Not Otherwise Classified

D. INJURY CAUSE CODE

STRUCK BY
01 Falling
02 Flying Object
03 Swinging Object
04 Tripping, Sliding or Falling Object
05 Motor Vehicle
06 Altercation
07 All Other Moving Objects

STRAIN OR OVEREXERTION
10 Lifting (Back)
11 Lifting (Other Than Back)
12 Pulling or Pushing
13 Reaching, Twisting or Overstretching
14 Cumulative Trauma

FALL FROM ELEVATION
20 Manhole Opening
21 Ladder or Scaffold
22 Machinery or Stationary Equipment
23 Piled Materials
24 Stairs
25 Heavy Equipment
26 Vacuum Trucks
27 Other Trucks

FALL FROM SAME LEVEL
30 Slip
31 Trip

STRUCK AGAINST
40 Moving Object
41 Stationary Object
42 Sharp Object

CAUGHT IN, UNDER OR BETWEEN
50 Running or Meshing Objects
51 Point of Operation (Machinery or Equipment)
52 Other Than Point of Operation
53 Moving and Stationary Objects
54 Two Moving Objects

EXPOSURE TO
60 Cold
61 Heat
62 Electric Current
63 Chemicals
64 Radiation
65 Noise
66 Dust
68 Person Contact

MISCELLANEOUS
70 Irritation
71 Ingestion
72 Aspiration
73 Job Stress
74 Insect or Animal Bites

E. AGENT CODE

10 Grading/Compacting Equipment
11 Excavating/Drilling Equipment
12 Crane
14 Vacuum Truck
16 End Dump Truck
17 Other Construction Equipment
18 Automobile
19 All Other Motor Vehicles
20 Hand Tools
22 Power Tools
24 Laboratory Glassware
26 Laboratory Equipment
28 Sampling Equipment
30 Hoses
32 Hydroblaster
34 High Pressure Washing
36 Hand Truck
38 Ladder
40 Scaffold
42 Stairs
44 Slippery Surface
45 Ice or Snow
46 Uneven Surface
48 Hot Liquid/Gases
50 Toxic Materials
52 Oxygen Deficient Atmosphere
54 Flammable Materials
56 Electric Current
58 Radiation
60 Dust
62 Compressed Gas
64 Gas Cylinder
66 Respirator/Breathing Apparatus
68 Protective Clothing
70 Other Clothing/Jewelry
72 Mobile Treatment Equipment
73 Fixed Treatment Facility
80 Office Equipment

F. SAFETY RULE VIOLATED CODE

01 IT Safety Rule
02 Client Safety Rule
03 Compressed Air
05 Work Permit, Class & Signs
06 Locking Out Equipment
07 Piping & Blocking of Materials
09 High Voltage Rules
09 Eye & Face Protection
10 Portable Ladders
11 Underground Construction
12 Cold Weather Hazards
13 Loading/Unloading
14 Hand Tools
15 Cleaning & Repair of Tools
16 Protective Clothing & Apparel
17 Flammable & Combustible Liquids
18 Job Procedure
19 Portable Electrical Tools
21 Flammable Gases
22 Fall Protection
23 Grinding Wheels
24 Machine Guarding
25 Scaffolding
26 Handling Materials
27 Horse Play & Fighting
28 Housekeeping
29 Unauthorized Workplaces
30 Welding Equipment
31 Machine Operations
32 Hand Tools
35 Crane Rules
37 Acids & Caustics
38 Tripping & Slipping Hazards
42 Respirator Protection
43 Hearing Protection
44 Confined Space
45 Late Report of Motor Accident
46 Temporary Cords & Lamps
47 Improper Operation of Equipment
48 Hydroblast
51 Driving Under the Influence (DU
52 Fork Lifts
54 Air Compressors & Receivers
60 No Safety Rule Violation
62 Did Not Review Job with Health & Safety

G. ACCIDENT PREVENTION CODE

02 Install Guards or Safety Device
04 Install Warning System
06 Store Flammables & Combustibles Approved Manner
08 Block or Secure Material in Machinery Against Unexpected Movement
10 Additional Housekeeping Needed
12 Remove Protruding Objects
14 Maintain Necessary Clearance
16 Control or Remove Atmospheric Conditions
18 Maintain Proper Piling or Storage
22 Personal Protective Equipment
24 Review Project with Health & Safety

INSTRUCTION RE INSTRUCTION OF:
50 Use of Equipment
52 Proper Operation or Working Speed
54 Use of Warning Devices
56 Proper Use of Safety Devices
58 Use of Tools in Good Repair
60 Proper Lifting Practices
62 Re-energizing Equipment Before Adjusting or Repairing
64 Stay Off Moving Equipment
66 Horse Play
68 Wearing of Personal Protective Equipment
70 Proper Chemical Handling Procedure
72 Safety Work Rules
74 [illegible] Training Class

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VEHICLE ACCIDENT REPORT

IT Vehicle

DRIVER _____ DRIVERS LICENSE _____ STATE _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

WORK PHONE #( ) _____ SS# _____ PROJECT NAME/# _____

VEHICLE # _____ YEAR _____ MAKE _____ MODEL _____ LICENSE PLATE # _____

STATE _____ VEHICLE OWNER: ☐ IT CORP. ☐ LEASED/RENTED ☐ PRIVATE VEHICLE

VEHICLE TYPE: ☐ COMMERCIAL MOTOR VEHICLE ☐ NON-COMMERCIAL

IF NOT OWNED: OWNER _____ PHONE ( ) _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

VEHICLE DAMAGE _____

OF VEHICLES TOWED FROM SCENE _____ NUMBER OF INJURIES _____ NUMBER OF FATALITIES _____

WERE HAZARDOUS MATERIALS RELEASED? ☐ YES ☐ NO IF YES, DESCRIBE MATERIALS _____

_____

Other Vehicle(s)

DRIVER _____ DRIVERS LICENSE _____ STATE _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

PHONE #( ) _____ SS# _____

OWNERS NAME (CHECK IF SAME AS DRIVER ☐) _____

ADDRESS _____ City _____ STATE _____ ZIP _____

INSURANCE COMPANY _____ POLICY # _____

AGENT'S NAME _____ PHONE # ( ) _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

VEHICLE YEAR _____ MAKE _____ MODEL _____ PLATE # _____ STATE _____

VEHICLE DAMAGE _____

PASSENGERS ☐ YES (List on reverse) ☐ NO INJURIES ☐ YES (List names & addresses on reverse) ☐ NO

Accident Description

ACCIDENT DATE _____ TIME _____ A M or P M

LOCATION (CITY STATE) _____

DESCRIPTION OF ACCIDENT _____

_____

_____

WITNESS _____ PHONE # ( ) _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

POLICE OFFICER'S NAME _____ DEPARTMENT _____

EMPLOYEE _____ (PRINT) _____ (SIGNATURE) _____ (DATE)

SUPERVISOR _____ (PRINT) _____ (SIGNATURE) _____ (DATE)

PROJECT MGR _____ (PRINT) _____ (SIGNATURE) _____ (DATE)

SITE SAFETY OFFICER _____ (PRINT) _____ (SIGNATURE) _____ (DATE)

PHONE OR FAX TO:
NATIONAL HEALTH & SAFETY (PHONE: 310-630-1781 * FAX: 310-618-7933)
AND
CORPORATE RISK MANAGEMENT (PHONE: 310-378-9933 * FAX: 310-791-2586)
~~WITHIN 24 HOURS, OR NOT LATER THAN NEXT BUSINESS DAY~~

INTERNATIONAL TECHNOLOGY CORPORATION

GENERAL LIABILITY, PROPERTY DAMAGE, & LOSS REPORT

DIVISION/SUBSIDIARY _____ CENTER NO _____ DATE _____

ADDRESS _____

HOW DID DAMAGE OR LOSS OCCUR _____

DESCRIPTION & VALUE ($) OF DAMAGED/LOST/STOLEN PROPERTY _____

LOCATION OF DAMAGED/LOST/STOLEN PROPERTY (Before Loss) _____

DATE & TIME OF DAMAGE, LOSS OR THEFT Date _____ Time _____ a.m. / p.m.

OWNER OR DAMAGED/LOST/STOLEN PROPERTY

Name _____ Phone No ( ) _____

Address _____ City _____

Employer & Address _____

INJURED PARTIES (Also complete a Supervisor's Employee Injury Report if an IT Employee)

1. Name _____ Phone No ( ) _____

Address _____ City _____

Employer & Address _____

2. Name _____ Phone No ( ) _____

Address _____ City _____

Employer & Address _____

WITNESSES

1. Name _____ Phone No ( ) _____

Address _____ City _____

Employer & Address _____

2. Name _____ Phone No ( ) _____

Address _____ City _____

Employer & Address _____

WERE PICTURES TAKEN? ☐ YES ☐ NO

WERE POLICE NOTIFIED? ☐ YES ☐ NO DEPT _____ REPORT NO _____

COMPLETED BY _____ _____ _____

(Print name) (Signature) (Date)

MANAGER _____ _____ _____

(Print name) (Signature) (Date)

Form HS020C 5/25/94

USE BACK SIDE IF NECESSARY

INTERNATIONAL TECHNOLOGY CORPORATION

INTERNATIONAL TECHNOLOGY CORPORATION

ACCIDENT/INJURY INVESTIGATION

*** MUST BE COMPLETED WITHIN 72 HOURS ***

Investigation Date _____ Date of Accident/Injury _____

Employee Name _____

Supervisor Name _____

Job Number/Name _____ / _____

Location of Accident/Injury _____

- Accident/Injury Classification

Injury	Vehicle	DOT
☐ Near Miss	☐ Chargeable	☐ DOT Vehicle
☐ First Aid	☐ Non-Chargeable	☐ DOT Reportable
☐ OSHA Recordable	☐ Not at Fault	
☐ Lost Workday		
		General Liability ☐

- Description (Provide facts, describe how incident occurred, provide diagram (on back) or photos)

_____

_____

- Analysis 1 (What unsafe acts or conditions contributed to the incident?)

_____

_____

- Analysis 2 (What systematic or management deficiencies contributed to incident?)

_____

_____

- Corrective Action(s) (List corrective action items, responsible person, scheduled completion date)

_____

_____

- Witnesses (Attach statements or indicate why unavailable)

_____

_____

Investigated By _____ (Print Name) _____ (Signature) _____ (Date)

Manager _____ (Print Name) _____ (Signature) _____ (Date)

HSO20E/1-13-98

(Attach Additional pages if needed)

INTERNATIONAL TECHNOLOGY CORPORATION

INTERNATIONAL TECHNOLOGY CORPORATION

ACCIDENT REVIEW BOARD

DATE	LOCATION:
BOARD MEMBERS	
ACCIDENT DATE	INJURED EMPLOYEES:
INVESTIGATION COMPLETE YES ☐ NO ☐	ACCIDENT TYPE:

THE FOLLOWING INFORMATION MUST BE PROVIDED BY THE REVIEW BOARD FOR THIS INCIDENT (PRINT):

SUPERVISOR:_____ **SITE SAFETY OFFICER**_____

PROJECT MGR:_____

CAUSE OF ACCIDENT

ACTION BY BOARD*

* ACTIONS BY THE ACCIDENT REVIEW BOARD ARE SUBJECT TO FINAL REVIEW BY THE HUMAN RESOURCES AND LEGAL DEPARTMENTS

ACCEPTED

_____ EMPLOYEE SIGNATURE

_____ MANAGER SIGNATURE

APPROVED

_____ HS MANAGER

REJECTED FOR:

_____

_____

APPROVED

_____ LOATION AREA MANAGER

REJECTED FOR:

_____

_____

APPROVED

_____ BUSINESS UNIT VICE PRESIDENT

REJECTED FOR:

_____

_____

INTERNATIONAL TECHNOLOGY CORPORATION

INJURY/ILLNESS CLASSIFICATION GUIDELINES

Medical Treatment:

The following are generally considered medical treatment. Work-related injuries for which this type of treatment was provided or should have been provided are almost always recordable:

- Treatment of **INFECTION**
- Application of **ANTISEPTICS during second or subsequent visit** to medical personnel
- Treatment of **SECOND OR THIRD DEGREE BURN(S)**
- Application of **SUTURES** (stitches)
- Application of **BUTTERFLY ADHESIVE DRESSING(S) or STERI STRIP(S)** in lieu of sutures
- Removal of **FOREIGN BODIES EMBEDDED IN EYE**
- Removal of **FOREIGN BODIES FROM WOUND**; if procedures is **COMPLICATED** because of depth of embedment, size, or location
- Use of **PRESCRIPTION MEDICATIONS** (except a single dose administered on first visit for minor injury or discomfort)
- Use of hot or cold **SOAKING THERAPY during second or subsequent visit** to medical personnel
- Application of hot or cold **COMPRESS(ES) during second or subsequent visit** to medical personnel
- **CUTTING AWAY DEAD SKIN** (surgical debridement)
- Application of **HEAT THERAPY during second or subsequent visit** to medical personnel
- Use of **WHIRLPOOL BATH THERAPY during second or subsequent visit** to medical personnel
- **POSITIVE X-RAY DIAGNOSIS** (fractures, broken bones, etc.)
- **ADMISSION TO A HOSPITAL** or equivalent medical facility **FOR TREATMENT**

First Aid Treatment:

The following are generally considered first aid treatment (i.e., one-time treatment and subsequent observation of minor injuries) and should not be recorded if the work-related injury does not involve loss of consciousness, restriction of work or motion, or transfer to another job:

- Application of **ANTISEPTICS during first visit** to medical personnel
- Treatment of **FIRST DEGREE BURN(S)**
- Application of **BANDAGE(S)** during any visit to medical personnel
- Use of **ELASTIC BANDAGE(S) during first visit** to medical personnel
- Removal of **FOREIGN BODIES NOT EMBEDDED IN EYE** if only irrigation is required
- Removal of **FOREIGN BODIES FROM WOUND**; if procedures is **UNCOMPLICATED**, and is, for example, by tweezers or other simple technique
- Use of **NON-PRESCRIPTION MEDICATIONS AND** administration of **single doses of PRESCRIPTION MEDICATION** on first visit for minor injury or discomfort
- **SOAKING THERAPY on initial visit** to medical personnel or removal of bandages by **SOAKING**
- Application of hot or cold **COMPRESS(ES) during first visit** to medical personnel
- Application of **OINTMENTS** to abrasions to prevent drying or cracking
- Application of **HEAT THERAPY during first visit** to medical personnel
- Use of **WHIRLPOOL BATH THERAPY during first visit** to medical personnel
- **NEGATIVE X-RAY DIAGNOSIS**
- **OBSERVATION** of injury during visit to medical personnel

INTERNATIONAL TECHNOLOGY CORPORATION

INJURY/ILLNESS CLASSIFICATION GUIDELINES
continued

The following procedure, by itself, is not considered medical treatment:

- Administration of TETANUS SHOT(S) or BOOSTER(S). However, these shots are often given in conjunction with more serious injuries; consequently, injury requiring these shots may be recordable for other reasons.

Loss of Consciousness - If an associate loses consciousness as the result of a work-related injury, the case must be recorded no matter what type of treatment was provided. The rationale behind this recording requirement is that loss of consciousness is generally associated with the more serious injuries.

Restriction of Work or Motion - Restricted work activity occurs when the associate, because of the impact of a job-related injury, is physically or mentally unable to perform all or any part of his or her normal assignment during all or any part of the workday or shift. The emphasis is on the associate's ability to perform normal job duties. Restriction of work or motion may result in either a lost worktime injury or a non-lost worktime injury, depending upon whether the restriction extended beyond the day of injury.

Transfer to Another Job - Injuries requiring transfer of the associate to another job are also considered serious enough to be recordable regardless of the type of treatment provided. Transfers are seldom the sole criterion for recordability because injury cases are almost always recordable on other grounds, primarily medical treatment or restriction of work or motion.

APPENDIX B

ACM SUBCONTRACTOR #1 WORK PLAN

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

AUGUST 22, 1996

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

PRE-JOB SUBMITTALS

WESTBANK ASBESTOS REMOVAL PROJECT

PRESENTED TO:

MR. THOMAS P. MATHISON

INTERNATIONAL TECHNOLOGY CORPORATION

AND

MR. J. HOBZA

U.S. ARMY CORPS OF ENGINEERS

113 Ondine Lane • Slidell, Louisiana 70458
Office 504-646-0039 • N.O. 504-523-4593 • Fax 847-1250

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SECTION A. DRAFT WORK PLAN

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

August 29, 1996

International Technology Corporation
William Penn Plaza
2790 Mosside Boulevard
Monroeville, Pennsylvania 15146-2792

RE: Westbank Asbestos Removal Project
Project Number 768209

SUB: Bid Clarifications

ATTN: Tom Mathison

Mr. Mathison:

We appreciate the opportunity to provide further information concerning our proposal for the above referenced above.

I have provided answers to the questions you raised in your letter dated August 29, 1996, below:

1. Based on the survey of the properties listed, the average removal area is 10 cubic yards or 60 square yards at 6" deep. We estimate an average of 10 hours per site, based on the average quantity of 60 square yards per property.

2. The 200 amps of electrical service I.T. will provide at the command post for each sub-contractor, is more than adequate for our electrical needs. Our electrical sub-contractor will make the necessary connections from the command post source to our electrical panel.

3. We stated in our work plan, we will provide a decontamination trailer. If we are provided a desk in an I.T. trailer, to maintain our paperwork, there will be no need for us to provide an office trailer for our work.

4. Personnel Decontamination At Command Post:
A 20 foot decontamination trailer will be located in our area at the command post. The trailer is divided into three chambers, a dirty room, equipped with a negative pressure machine, a shower room with 6 shower heads, and a clean room. Each chamber is separated by an air lock.
Workers will be escorted by the supervisor from the work areas to the command post at the completion of each work day.

113 Ondine Lane • Slidell, Louisiana 70458
Office 504-646-0039 • N.O. 504-523-4593 • Fax 847-1250

The workers will enter the dirty room of the decon trailer, remove their disposable suits, rubber boots and hard hats. The disposable suits will be placed in an ACM bag for disposal as asbestos containing material. Rubber boots, hard hats and respirators will be carried into the shower by the worker, and washed for use the next day. Workers will thoroughly wash body, hair, and face before exiting shower room into the clean room area. Once in the clean room, workers will dry off, and place street cloths on, then exit the command post.

Equipment Decontamination At Command Post:
Since you noted, we are not required to construct an equipment decontamination facility at the command post, as I had proposed in the work plan I submitted, we will decontaminate the equipment we use for the excavation work, at the last work area of the day. At the end of the shift, we will lay a drop cloth over an area of ground in the area where removal has been completed. The workers will remove residual material from the tools and back-hoe bucket, over the drop cloth. The workers will wash off the tools and back-hoe bucket with a pump-up sprayer. The drop cloth will be folded and placed into an ACM bag for disposal as asbestos waste.

Specific Equipment Details And Operational Procedures:
All hauling will be performed by an independent hauling sub-contractor, licensed and insured to haul asbestos waste.
We will lease rubber tire back-hoes, for the excavation of the material and to transport the acm to the disposal vehicle.
The front bucket will be covered for transporting materials.
We will use only trained back-hoe operators.

5. Since there will be no sewer line available at the command post, we will pump the filtered water from the decontamination trailer into 55 gallon drums. We will transport the filtered water off site each day, for proper disposal.

6. Removal, Packing And Loading Methods: Large Areas
Workers will don 2 full body disposable suits, steel toe rubber boots, hard hats, safety glasses, and 1/2 face H.E.P.A. filtered respirators.
After the appropriate warning signs and barrier tape have been installed, workers will mist the work area with amended water. In areas where we have access to utilize the back-hoe, the operator will carefully dig up the ACM material being extremely cautious not to create dust during the removal process. The back-hoe operator will pile the material in a location inside the barricaded work area. After all the material that can be removed with the back-hoe is complete, the bach-hoe will use its front bucket to transport the material to the disposal vehicle. The workers will cover each load during transportation to the disposal vehicle.

The disposal vehicle will be lined with 2 layers of 6 mil poly, all seams will be spray glued and taped. The truck, dump bed will be covered with a heavy tarp placed over the load and secured to the bed rails. The material in the dump bed will wetted prior to installing the tarp.

The barricaded area will be expanded during loading of ACM materials to the disposal vehicle. The disposal vehicle will be placed in close proximity to the work area. The barricade tape and warning signs will be connected from the disposal vehicle to the work area.

Since the path used to move ACM from the work area to the disposal vehicle will be inside a regulated area, workers will police the path to ensure no ACM has been tracked onto or dropped on adjacent non-contaminated area. The back-hoe will be checked for contamination on the frame and tires, prior to transporting the ACM.

After all the material that is accessible to excavation by the back-hoe has been removed, workers will remove the remainder of the ACM material by hand. Small, hand shovels, rakes and H.E.P.A. vacuums will be used to removed the remainder of the material. After all material has been removed the workers will place the ACM material in the bucket of the back-hoe for transportation to the disposal vehicle. Workers will wet the area where the ACM was removed prior to leaving the site.

If the area cannot be completed in one shift, the workers will wet the area and place a layer of poly over the work area, until work starts the following shift.

Removal, Packing And Loading Methods: Small Areas
In areas where use of equipment is not possible, workers will take the same precautions as when working with the back-hoe. Workers will use picks and shovels to remove large areas. Workers will continually wet the material during this process to eliminate the release of dust. After all large pieces of ACM have been removed, workers will use small hand shovels and rakes to complete the removal. H.E.P.A. vacuums and small garden tools will be used to clean around tree roots, utilities, fence post and other items found on the properties.

Site Decontamination Of Workers And Equipment:
Workers will place two disposable suits on, prior to starting work, (double suit method). At the completion of each work area, the workers will remain inside the regulated area. Standing on a poly drop cloth, the worker will remove the outer disposable suit. The outer suit will be placed into an asbestos disposal bag. Rubber boots will be wet wiped and placed in a plastic bag for transportation to the next work site. Respirators and face will be wet wiped, the respirators will be placed into a plastic bag for transportation to the next work site.

Tools and equipment will also be cleaned over a poly drop cloth, at completion of each site. The tools will be placed in plastic bags for transportation between work areas. The poly drop cloths will be folded up and placed in ACM bags for proper disposal.

Since our engineering controls should control the dust during removal, respirator filters should last at least four shifts. However, respirator filters will be changed whenever the worker or supervisor deems necessary.

We will provide the workers a 10 minute water break in the morning and a 10 minute water break in the afternoon. The temperature will dictate additional water breaks. We will give a 1 hour lunch break to all workers.
Each time the worker takes a water break or lunch break, he or she will remove the outer suit, place the suit in an ACM bag, wash the face area and respirator, prior to removing the respirator. The worker will take the appropriate break and place a clean suit over the inner suit, replace the respirator and resume work. If the worker leaves the regulated area, his or her boots and hard hats will be wet wiped and placed in a plastic bag for storage until the workers returns to the regulated area.

7. Packaging, Transporting And Dumping:
We will utilize a licensed and insured waste hauler to transport the asbestos waste to the Jefferson Parish Landfill. Our project manager will notify the landfill for each load.
The dump bed will be lined with 2 layers of 6 mil poly, all seams will be spray glued and taped. After completion of loading, a layer of poly will be taped and glued to the poly liner, thus creating a complete poly enclosure.
The material will be adequately wet during transportation. A heavy tarp will be placed over the load, and secured to the sides of the truck.
The poly slides easily along the bottom of the steel bed during dumping.

8. We understand that I.T. will be responsible for locating utilities at each site prior to our work.
No taping or covering windows or doors at the residences, is in our scope of work.
If the site is not completed at the end of the day, the regulated area will be covered with polyethylene by our company until the next shift.
Our company must collect personnel air samples from 25% of the workers on each crew, or at least one member of each crew. The cassettes will be given to I.T. for processing. Our company is responsible to ensure we meet the OSHA regulations.

If you have any questions concerning this information, please call our office at (504) 646-0039.

Sincerely:
QUALITY ENVIRONMENTAL CONTRACTORS, INC.

Gerald M. Avery

WESTBANK ASBESTOS REMOVAL PROJECT

PROPOSED WORK PLAN

1.00 MOBILIZATION:

1.01 Workers will transport, equipment, materials, tools, and mobile decontamination facility to the area designated by I.T.'s project manager.

1.02 Mobilization will begin as soon as the notice of award is issued, and the necessary security measures are in place at the site command post.

1.03 A licensed electrical sub-contractor will make all electrical connections to our equipment.

1.04 All electrical systems will be inspected by the electrical sub-contractor prior to use by our employees.

1.05 A licensed plumbing sub-contractor will make all necessary water connections to our equipment.

2.00 MEDICAL SURVEILLANCE PROGRAM:

2.01 All project managers, supervisors and workers will have the necessary physical, and physician's written opinion, required to perform asbestos removal.

2.02 All project manager, supervisors, and workers will follow all O.S.H.A., and company health requirements.

3.00 TEMPORARY SERVICES:

3.01 Temporary electrical services will be provided to the contractor by I.T. Corporation, this temporary service will be provided at the command center only.

3.02 Temporary water supply will also be provided at the command center by I.T. Corporation.

3.03 Temporary electrical service required in the field, will be supplied via portable generator, supplied by the contractor.

3.04 Water used in the course of the project by the contractor will be supplied to each supervisor on a daily basis or as required in plastic 55 gallon drums. A hand pump will be used to pump the water from the drum to the sprayers used by the workers.

4.00 WORKER PROTECTION:

4.01 Workers will be fully trained, licensed and experienced in the hazards of asbestos removal.

4.02 All workers will have a current physical and medical surveillance.

4.03 Workers will don, hard hats, safety shoes, safety glasses and full body disposable suits.

4.04 O.S.H.A. required personnel air monitoring will be performed on a daily basis to ensure proper respirator protection.

5.00 RESPIRATOR PROTECTION:

5.01 Workers will start the work utilizing 1/2 face H.E.P.A. filtered, negative pressure respirators.

5.02 Any upgrade in respirator protection will occur when the personnel air monitoring indicates the protection factor of the 1/2 face respirator is not adequate for the task being performed.

5.03 Engineering controls will also be evaluated, if their is a higher than normal fiber count indicated during personnel monitoring.

5.04 Company respirator protection program is included with corporate safety program.

6.00 SAFETY TRAINING:

6.01 Workers will attend daily tool box safety meeting each morning prior to the start of work.

6.02 Topics will cover safety concerns that are specific to this project.

6.03 Workers will be encouraged to participate and deliver the daily safety meetings.

6.04 Supervisors will attend the daily safety meeting at the command center at the conclusion of each days work.

6.05 The supervisor will incorporate the information gathered at the command center safety meeting into the tool box safety meetings.

7.00 **WARNING SIGNS:**

7.01 Asbestos warning tape will be placed around the perimeter of each work area.

7.02 Asbestos warning signs will be posted on all sides of the work area.

7.03 Each site supervisor will monitor the work area and ensure no one, unless qualified and with current paperwork in our possession on is allowed inside the barricaded area.

7.04 The barricade tape will remain in place until the contractor installing the back fill has started his or her work.

8.00 **WORKER DECONTAMINATION UNIT:**

8.01 A mobile self contained decontamination facility will be placed at the command center and fully operational prior to the start of our work.

8.02 The decon trailer will consist of a H.E.P.A. filtered dirty room, a four head shower room, and a separate clean room.

8.03 Each room is isolated from the other via freezer flaps, used as air locks.

8.04 The clean room will be equipped with lockers for storage of personal effects and respirator storage.

8.05 Since the work area are spread over a large geographical area, workers will not totally decontaminate until the end of each shift.

9.00 **SITE WORKER DECONTAMINATION:**

9.01 Workers will double suit at the beginning of each new work area.

9.02 At the completion of each area, workers will remove the outer disposable suit and place in a properly labeled asbestos disposal bag.

9.03 Workers will then wet wipe his or her respirator and face area, before removing the respirator.

9.04 The respirator will be placed in a plastic carry bag, prior to leaving one work area and proceeding to the next area.

9.05 Upon arrival of the new work area, workers will place a clean disposable suit over the one he has on, and then place his or her respirator on, prior to starting the next job.

9.06 The workers will repeat the above steps until the end of the shift where he will be transported to the decontamination facility located at the command center.

10.00 **END OF SHIFT DECONTAMINATION:**

10.01 Upon arrival at the mobile decontamination facility, workers will enter the decon trailer through the dirty room entrance.

10.02 Workers will remove all disposable clothing and place in labeled asbestos disposable bags.

10.03 Workers will then enter the shower, he will thoroughly decontaminate his or her body and hair with soap and shampoo.

10.04 Workers will carry their respirators into the shower and properly clean the respirator for the next shift.

10.05 The respirators will be placed in plastic bag for storage until the next shift.

10.06 Workers will exit the shower into the clean room, where he will place his or her street clothes on and exit the command center.

11.00 **EQUIPMENT AND TOOL DECONTAMINATION:**

11.01 An equipment decontamination facility will be constructed adjacent to the personnel decontamination facility at the command center.

11.02 The equipment decontamination facility will be constructed of wood studs and 10 mil reinforced polyethylene.

11.03 The decon will consist of a wash down station under negative pressure and a clean area isolated by an air lock.

11.04 At the end of each shift, all tools and equipment parts exposed to the asbestos will be cleaned in the decon.

11.05 The equipment decon will be equipped with a catch basin to retrieve the water, and a pump, to run the contaminated water through an asbestos water filter.

11.06 All tools will be placed in asbestos disposal bags for transportation from one site to the next, and for transport to the decontamination facility at the command center at the end of each day.

12.00 **PREPARATION OF WORK AREA:**

12.01 The project manager will plan a minimum of 3 days work in advance.

12.02 Workers will place appropriate barricade tape and warnings around the work area designated by I.T. Corporation personnel.

12.03 Supervisor will ensure all civilians are clear of the work area, and outside the barricaded area before any work begins.

12.04 The supervisor will notify the I.T. supervisor of any potential conflict with property owners prior to the start of work.

12.05 The supervisor will monitor all work and continuously police the barricaded area.

13.00 **SCOPE OF WORK:**

13.01 Removal of asbestos containing cementious material, used as drive and walk ways. In some cases randomly placed on the different properties identified for this project.

13.02 The asbestos material was identified on residential properties, school properties, day care facilities and vacant lots.

13.03 The asbestos cementious material was noted to be from 4 to 6 inches deep in most locations.

13.04 Each of the 600 various locations have varying amounts of the asbestos material present on the properties.

13.05 The asbestos material to be removed will be identified at each location by I.T. Corporation personnel.

13.06 The area will be clearly marked, prior to establishing the work area perimeters.

13.07 Each work area will be measured and quantities verified by I.T. Corporation personnel, prior to the start of work.

13.08 Any quantities disputes will be settled by Corps Of Engineers personnel.

13.09 Our job is to remove all of the visible asbestos containing materials at each designated location.

13.10 Workers will have no dialog with property owners or others who may be around the work areas.

14.00 **REMOVAL PROCEDURES:**

14.01 Each work area will be barricaded and asbestos signs posted.

14.02 Material will be wetted to control any potential fiber release, and to control dust.

14.03 One worker will be assigned to continuously wet the material being removed.

14.04 **Small Areas** - areas of less than 1 square yard, areas under buildings, areas around utilities, and trees, will be removed by pick, and shovel, and or small garden shovels and H.E.P.A. vacuums.

14.05 Workers will carefully break the material into manageable pieces, and shovel the material into bucket of rubber tire front end loader.

14.06 Front end loader will transport material to disposal vehicle.

14.07 Material that cannot be shoveled, will be loosened using small hand tools and H.E.P.A. vacuums, until all visible material has been removed.

14.08 **Large Areas** - in areas large enough to accommodate equipment, a rubber back hoe loader will be utilized to remove the material.

14.09 The back hoe will use the rear excavating bucket to dislodge the material and place in an pile.

14.10 The back hoe will use the front bucket to scoop the material from the pile and transport to the disposal vehicle.

14.11 Any areas not accessible to equipment, will be removed by hand.

14.12 In some cases, the back hoe will be used in conjunction with the front end loader.

14.13 There may be areas large enough, such as empty lots and large drive ways, where the back hoe can empty the load directly into the front end loader.

14.14 The front end loader can then transport the material directly to the disposal vehicle.

14.15 Once all visible material has been removed, the workers will rake the area to ensure no asbestos material remains.

14.16 Workers will wet the removal area a final time before leaving the site.

15.00 **NOTICE OF COMPLETION:**

15.01 The supervisor will notify the I.T. Corporation inspector a minimum of 1/2 hour before the project is complete.

15.02 The supervisor and the I.T. inspector will inspect the area to ensure all visible material has been removed.

15.03 One worker will remain to remove any material the I.T. inspector may find suspect.

15.04 The I.T. inspector will sign a final completion form for each area we have completed.

15.05 The supervisor and his crew will move to the next designated area to begin work.

16.00 **DISPOSAL VEHICLE:**

16.01 We will utilize an 8 cubic yard and an 18 cubic yard dump truck to transport the asbestos material to the landfill.

16.02 The dump trucks will be used in lieu of dumpsters because of their mobility, and there will be no delays in moving from one site to another.

16.03 The dump beds will be lined or polyethylene liners will be used to cover the dump beds.

16.04 Water proof tarps will be placed on top of the dump beds for transportation to the landfill and the bed will remain covered when not in use.

16.05 Our company is licensed to haul asbestos material.

17.00 CREW SIZE AND SHIFTS:

17.01 We will deploy a minimum of 3 crews to start the project.

17.02 Each crew will have a certified asbestos supervisor.

17.03 Each crew will vary in size from 3 to 5 workers, all licensed and trained in asbestos removal.

17.04 The crews will work 6 days per week, 10 hours per day.

NOTE:

We checked into the use of a vec-loader (vacuum powered truck), and found none to be H.E.P.A. filter equipped.

Without H.E.P.A. filter protection, all exhaust is potentially contaminated.

All worked better moving a slurry, rather than solid material.

None would vacuum pieces of aggregate over 3 inches in diameter.

The time it would take to break down the material to use a vacuum truck is far more labor intensive than using the methods we proposed.

Our main concern was the potential of dust and fiber release occurring while breaking the material into small enough pieces to be vacuumed.

SECTION B. CORPORATE SAFETY PLAN

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

CORPORATE SAFETY PROGRAM
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QUALITY ENVIRONMENTAL CONTRACTORS, INC.

CORPORATE SAFETY STATEMENT

CORPORATE SAFETY PROGRAM

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

1.0 PURPOSE

The purpose of this statement is to formally communicate Quality Environmental Contractors position relative to occupational safety and health.

2.0 SCOPE

This Corporate Safety Policy Statement applies to all work performed by Quality Environmental Contractors, Inc.

3.0 POLICY

It is the policy of this corporation to provide a safe and healthy place of employment for all of its employees and for the public in each of this corporation's operations, and to voluntarily abide by all safety regulations as they pertain to our industry. Safety will always take precedence over more expedient unsafe operations. Every attempt will be made to provide equipment and create conditions that will make for a safe and healthy work place. We will provide safety education and training to all our employees, who are expected to read and understand the Rules Of Safety that are provided on each job site. Any employee who willfully disregards known safe practices will be subjected to strong disciplinary action. In the case of subcontractors, they will be expected to abide by the provisions of this policy. At Quality Environmental Contractors, we make safety a condition of employment.

4.0 RESPONSIBILITY

4.1 MANAGEMENT

In general, the management of each QEC project has the responsibility to:

* Maintain safe and healthy employee working conditions and to establish safe operating procedures at each job.

* Comply with the safety standards of all federal and state regulatory agencies as a minimum requirement for safety performance at each job.

* When required to do so by contract, comply with all safety requirements of the job site.

* Provide ample and timely safety training and instruction to all employees to enable them to perform their work safely.

* Make available all necessary safety devices and protective equipment for the prevention of employee accidents, injuries or illnesses, and require their mandatory use where required.

* Construct and produce a product which is free of foreseeable hazards as possible.

* Maintain continuing employee interest in safety and health matters applicable to company activities, and see that its management sets a good example in safety and loss control practices.

4.2 **EMPLOYEES:**

This corporation regards the promotion of safety and health matters as a mutual objective of both management and employees. Therefore, each employee has the responsibility to:

* Perform his/her job according to good safety practices.

* Learn and implement all company and job site safety rules, follow all posted, instructed or discussed safety practices and use all appropriate safety devices and protective equipment necessary for his/her protection.

* Refrain from any unsafe act that might endanger themselves or their fellow worker.

* Report all incidents that have or may lead to an employee accident, injury or illness. In the event of any injury, he/she must report immediately to the designated area for medical treatment. In all cases, the employee, foreman and supervisor must report and record all accidents.

* Assist in the investigation of accidents with the objective of introducing safety measures to prevent a reoccurrence of that accident.

* Report any incident of property damage. poor quality or unsafe condition.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

O.S.H.A. INSPECTION POLICY

5.0 OSHA INSPECTION POLICY

5.1 POLICY

It is the policy of QEC to voluntarily comply with all aspects of the Occupational Safety and Health Act of 1970 (the ACT).

It is the policy of QEC to admit any lawfully delegated OSHA inspector or health compliance officer who, upon preventative of proper credentials, request entry to conduct a site inspection.

This policy however, is not intended to abridge the constitutional rights of our company, who have the right to request a warrant prior to allowing entry for an inspection at the work site.

QEC will not, under any circumstance, discharge or otherwise discriminate against any employee who has exercised any right under the ACT, including the right to make safety and health complaints or request an OSHA inspection.

5.2 CONDUCT OF THE INSPECTION

The Compliance Officer will present identification to the supervisor in charge of the project, state the purpose of the visit, and request an opening conference be held with representatives of all subcontractors and workers.

When the required personnel have been assembled, the Compliance Officer will than begin the opening conference with the following:

State the nature of the inspection, general or specific compliant, target industry, scheduled inspection, industrial hygiene, etc.

Indicate the approximate length of time the inspection will take.

Request copies of the OSHA 200 form, safety programs, accident reports, inspection surveys, etc.

Approve members of the inspection party. Each employee has the right to representation, however, the CO has the right to choose the representative.

5.3 COMPLIANCE OFFICER (CO)

The function of the CO is to identify conditions and/or acts he considers unsafe and in violation of the Construction Industry, OSHA Safety and Health Standards, 29 CFR 1926/1910.

In pursuit of his duties, he may go wherever he wishes on the job site. he may take any amount of samples or measurements he feels are of importance, photograph objects or personnel, and conduct interviews with employees. He can request copies of any literature, documents, or those parts of the contract which relate to safety or industrial hygiene only.

The Co may not, however, violate any known safety regulations.

Failure to comply with job site safety program is cause for not permitting the CO on the job site.

The CO may consult with employees regarding matters of safety and health to the extent that is necessary for the conduct of an effective and thorough inspection. The conduct of the inspection should be as to preclude unreasonable disruption of the operation of the project.

5.4 SUPERVISOR'S INSPECTION GUIDELINES

During the course of the inspection, the supervisor in charge of the project should accompany the inspection party and adhere to the following guidelines:

* If the inspection is the result of an official compliant, request a copy of the compliant prior to the inspection.

* Begin a chronological record of the entire inspection. Record specific events, locations, how long, and specific comments made by the CO. Record names of employees interviewed. At the conclusion of the inspection, record all findings in the supervisor's daily journal.

* Allow the CO to lead the inspection. He will generally look in only those areas he has a feeling of expertise and will avoid those areas in which he is not to sure of himself.

* Do not permit unneeded personnel to linger near the inspection party.

* Do not harass, threaten, or otherwise intimidate the CO.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

SAFETY ORGANIZATION POLICY

6.0 SAFETY ORGANIZATION

6.1 PURPOSE

To provide guidelines to QEC's safety organization which will develop the level of safety and loss prevention consistent with other sound business management and loss control programs.

6.2 OBJECTIVES OF SAFETY ORGANIZATION

The objectives of QEC's safety organization are to:

* Evaluate existing safety systems and procedures on each project. Analyze problem areas, review administrative policies as they pertain to safety, and to determine the specific loss prevention needed.

* Develop a comprehensive corporate safety program designed for use on every project.

* Ensure the desired implementation and continuation of this program by means of employee participation through orientation and in-service training, management work shops, safety audits, selection of qualified safety personnel, and advance planning for safety requirements at new projects.

* Develop an inventory and evaluate all safety assets. Prepare an inventory and evaluate all safety services and equipment presently in use on each project.

* Develop a safety audit and inspection program. The safety audit seeks to determine the integration of safety into overall management function within the corporation, and will provide the mechanisms for establishing effective and efficient use of safety resources. The audit program will ensure that the most cost-effective safety program is established and maintained on a continuing basis.

* The goal of safety management is production, production which maximizes profits and safety losses and regulatory violations. QEC management recognizes the necessity for development of its safety program and the resultant growth of its safety organization.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

ACCIDENT INVESTIGATION

O.S.H.A. 200 FORM

7.0 ACCIDENT INVESTIGATION

7.1 PURPOSE

The provide an outline of the measures necessary to investigate the site and reconstruction of the accident scene, analyze the findings and circumstances involved, and insure the quality of documentation in order to form an accurate understanding of the immediate and basic causes of an accident.

7.2 POLICY

All employees will be instructed to report any injury, reguardless of the apparent severity, to their immediate supervisor as soon after the accident occurs as possible. Each of these accidents will be investigated and the results accurately and timely documented.

7.3 REPORTING

When an accident occurs it is the responsibility of the injured employee's immediate supervisor to properly investigate the accident and complete the Report of Injury.

The Report of injury will include the following:

* Decription of the accident: Be specific and honestly report the sequence of events involved.

* Decride accident causes, unsafe acts, and the human element of the accident. Note any disreguard of safety regulations, improper use of safety equipment, failure to wear safety glasses, hard hats, etc.

* Descride the physical elements of the accident, involving such things as tools, equipment, materials or facilities. List such things as, unprotected floor openings, scaffolds without guard rails, defective ladders, insufficient lighting, poor housekeeping, ect.

* Explanation of corrective action taken.

* It is extremely important that the investigating supervisor be specific as to the corrective action taken by him if future accidents of this type are to be prevented.

8.0 INCIDENT/ACCIDENT INVESTIGATION REPORT

The completed formal investigation will be documented and it will not only include the information contained in the Report of Injury form, but will also include an in-depth analysis of the accident.

The following procedures will be established for a formal investigation:

* The supervisor schedules a time and place for the formal investigation, which will be as soon after the accident as possible.
* The supervisor will request a representative for the work force to assist in the investigation.
* They will interview all witnesses one at a time in a private location.
* A third party will take transcripts or notes during the interview.
* At the completion of the interviews, the group will assemble at the accident location. The supervisor will act as chairman during all phases of the investigation.
* The supervisor will instruct all personnel the meeting is to establish all known facts and not to take disciplinary action.

8.01 REPORT FINDINGS

At the conclusion of the investigation, a formal report will be filed with the safety department. Results of the report will be given to the injured employee and a copy placed in his/her personnel file.

9.0 ACCIDENT REPORTING

9.01 EMPLOYER'S FIRST REPORT OF INJURY

Each state within the United States has either developed its own Employer's first report of injury or has indicated a willingness to accept a suitable substitute. Generally, where a state does not have its own form, the acceptable substitute is that form used by the employer's Worker's Compensation Insurance Carrier.

* The Employer's First Report of Injury should be completed by the insurance clerk from the information contained on the Foreman's Report of Injury. A Report of Injury must be completed for every accident in which an employee has either sustained, may have sustained, or may potentially sustain injury or illness.

9.02 LOG OF FIRST AID TREATMENT

All injuries requiring first aid treatment should be entered on the Log of First Aid Treatment. In the event the injury is not then OSHA recordable, and treatment is considered first aid only, then the Employer's First Report of Injury should be completed without sending a copy to the Worker's Compensation insurance carrier.

9.03 OSHA FORM 200

Whenever an injury or illness meets the following criteria, it must be recorded on the OSHA Form 200:

* Every work related fatality
* Any diagnosed work-related illness
* All work-related injuries requiring "medical treatment" (see guidelines for treatment)
* All work-related injuries which cause a workers to have a loss of consciousness
* All work-related injuries involving restriction of work or motion
* If the work-related injury involves days away from work or days of restricted duty
* All work-related injuries involving a transfer to another job or termination of employment

9.04 **MEDICAL TREATMENT**

The following are generally considered to involve medical treatment, and as such, should be recordable for a work-site injury:

* Antiseptics applied on a second or subsequent visit to a doctor or nurse.
* Burns of a second or third degree nature.
* Butterfly sutures.
* Compresses, hot or cold, when applied a second or subsequent visit to a doctor or nurse.
* Cutting away dead skin.
* Diathermy treatment.
* Removal of foreign bodies that are embedded in the eye.
* Treatment for infection.
* Removal of a foreign body from a wound by a doctor.
* When prescription medications are used (only as required by law)
* Soaking, either in hot or cold, on a second visit or subsequent visit to a doctor or nurse.
* Sutures (stitches)
* Whirlpool treatment when requested by a physician.
* X-ray which is positive.

9.05 **FIRST AID TREATMENT**

The following are considered to involve only first aid treatment and need not be reported if the work-related injury does not involve any other criteria:

* Application of an antiseptic on a first visit to a doctor or nurse.

* First degree burns.

* Compresses, hot or cold, when applied on a first visit to a doctor or nurse.

* Use of an elastic bandage on a first visit to a doctor or nurse.

* Irrigation of the eye for the removal of a foreign body when not embedded.

* Removal of foreign bodies from a wound by use of tweezers or other simple techniques.

* Use of nonprescription medications.

* Observation of injury on a second or subsequent visit.

* Applying ointment to abrasions to prevent creaking or drying.

* Tetanus shots, initial or boosters.

* Hospitalization for observation(when patient receives no treatment other than first aid)

* X-ray which is negative.

10.00 OSHA REPORTING

10.01 PURPOSE

To establish uniform guidelines for compliance with the reporting and recordkeeping requirements of the Occupational Safety and Health Administration.

10.02 OSHA RECORDKEEPING FORMS

The log and summary forms, commonly referred to as OSHA 200 log, ia a convenient means for recording injuries and illnesses and for noting the extent of each case. Entries must be made on the log no later than 6 (six) working days after receipt of information that a recordable illness has occurred.

10.03 SUPPLEMENTARY RECORD FORM (OSHA 101 FORM)

For every recordable injury or illness entered on the OSHA 200 log, it is necessary to record additional information on the OSHA supplementary record, the OSHA 101.

As with the OSHA 200 log, the OSHA 101 form must be completed and present within the company within 6 (six) working days after receipt of information that a accident or illness has occurred.

10.04 LOCATION AND MAINTENANCE OF RECORDS

Ordinarily, records must be maintained at each establishment, but records of employees associated with a fixed establishment must be maintained:

* Records for employees working at a fixed location, such as factories, warehouses, offices, etc. should be maintained at the work location.

* Records for employees that report to a fixed location but work somewhere, such as construction managers, transportation workers, etc., should be maintained at the place where the employee reports each day.

* Records of employees whose payroll or personnel records are maintained at a fixed location, but who do not report to work at a single establishment, such as salespeople, should be maintained at the base from which they are paid.

10.05 EMPLOYEES NOT AT A FIXED LOCATION

Some employees are subject to common supervision, but do not report to work at a fixed location on a regular basis. These employees are usually engaged in physical dispersed activities that occur in construction, asbestos removal, installation of materials, etc. Records for these employees should be maintained as follows:

* Records may be maintained at the field office if a suitable location is available.

* Records may be maintained at an established central location; however, the address and telephone number of the place where the records are kept must be available at the workplace.

10.06 POSTING REQUIREMENTS

From February 1st to March 1st, each establishment must post in areas where notices to employees are customarily posted, a copy of the year's total and information following the fold line of the last page of the OSHA 200 log.

An establishment having no recordable injuries or illnesses during the year must enter zeros on the total line and post the form as required.

10.07 RECORDKEEPING, RETENTION, AND ACCESS

Recordkeeping forms must be retained for (5) five years after the end of the calendar year to which they relate. Additionally, the OSHA 200 log must be maintained for the same period. All recordkeeping forms and OSHA 200 logs must be available for inspection and coping by the representatives of state, or federal OSHA.

The OSHA 200 log will be made available to employees upon request.

10.08 REPORTING OF FATALITY OR MULTIPLE HOSPITALIZATION ACCIDENTS

Employers must report to the local OSHA area office, every accident which results in one death or hospitalization of five or more employees.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

EMERGENCY ACTION PLAN

11.00 EMERGENCY ACTION PLAN

11.01 AREAS OF CONCERN

Emergency planning must develop procedures for dealing with many types of emergencies which can occur at any time. each job site must therefore respond to four major areas of concern:

* General disaster, such as fires, explosions, etc.
* Natural disasters, such as flood, tornado, severe storms.
* Civil disorders, such as strikes, civil disturbances, etc.
* Emergency spills, such as asbestos, hazardous chemicals, etc.

11.02 FIRE AND EXPLOSION

Notification:

* The local fire department must be notified immediately in the event of a fire. This policy must hold true regardless of the size of the fire or the ease with which it may have been extinguished. A second call to the fire department advising them the fire has been extinguished is far better than the possibility of having a fire accidentally get out of control before the fire department has been notified. Employees in the immediate vicinity of the fire, must also be notified of the existence of the fire at this time.

EXTINGUISHING EQUIPMENT:

* There must be sufficient numbers of approved fire extinguishing equipment available to facilitate emergency egress from the work area, that they can be readily accessible, that they are properly maintained at all times, and that personnel are familiar with their operation and location.

DISCOVERING THE FIRE:

* Any person discovering a fire, should quickly and carefully remove anyone who is injured or in immediate danger. This person must be careful not to risk injury to himself as it is most important that he remains conscious and able to report the fire.

11.00 Emergency Action Plan - Fire and Explosion

SOUNDING THE ALARM:

* The nearest telephone should be used to report the fire, with the individual reporting the fire providing the following information: That their is a fire, What is on fire, The specific location of the fire, The name, phone number and location of the person reporting the fire. Emergency telephone numbers for the fire department, hospital, ambulance, doctor, police, and safety office must be posted throughout the job site and at each telephone location.

CONTAINING THE FIRE:

* Having sounded the alarm, attempts should now be made to contain the fire. This should be done by closing all doors and windows in the immediate vicinity of the fire and trying to remove any flammable materials. If possible, all non-emergency electrical equipment in the immediate vicinity of the fire should be turned off.

EXTINGUISHING THE FIRE:

* Extinguishing the fire should only be attempted if there is portable fire fighting equipment available and the fire is in its incipient, that is initial or beginning stage, and can be safely controlled or extinguished with this equipment.

EVACUATION:

* When evacuation is deemed necessary, there should be no hesitation in requiring personnel to immediately vacate the area. Emergency exits and other means of egress from the area must be noted prior to the start of the project.

11.03 **NATURAL DISASTERS:**

Floods, tornadoes, severe thunder storms, and blizzards, are a few of the natural disasters that occur each year, for which we must be prepared if we are to protect our employees and property.

In most cases, merely advising our employees of the coming danger and seeing to it that they are in a safe location, should the incident occur during normal work hours, will be sufficient.

11.04 **EMERGENCY SPILLS:**

Even in a well planned and executed program, the possibility exist that an accident will occur and an emergency spill will take place. Recognition of this fact requires suitable emergency procedure must be made known to all persons potentially involved.

The following must be carried out in the event of a spill:

* Immediately notify management, the customer representative, and the safety department.

* Clear the location of all persons except those needed to deal with the spill.

* Determine the nature of the spill, its size, and the source of the spill. Use M.S.D.S. information to determine the seriousness of the spill and what type of precautions are necessary in dealing with the spill.

* There are certain hazardous materials that require immediate notification to either local, state or federal authorities in the event of a spill. Depending upon the hazardous material involved, it may be necessary to notify the police, fire department, or a specific agency of the government.

* Control or stop the source and contain the spill, in case the case of asbestos, this would mean spraying the spill with a fine mist of amended water and covering the spill with 6-mil polyethylene. Depending upon the hazardous material involved, limit access to drains and air inlets of the air conditioning, heating and ventilation systems to prevent further spread of the material.

* When required, construct an enclosure around the area of the spill, and if necessary, include decontamination facilities. The enclosure should be large enough to enable workers to utilize whatever mechanical and/or electrical equipment required to clean up the spill. All personnel entering the enclosure must be utilizing the required personnel protective equipment, such as respirators, protective clothing, etc.

* Recognized clean-up procedures, according to the type of material involved, must be initiated and should continue until the area receives final clearance. Approved waste containers must be used and disposed of in accordance with regulated procedures.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

EMPLOYEE SAFETY TRAINING

12.00 **EMPLOYEE TRAINING**

The supervisor is the key to accident prevention within the construction industry. He is that person between top management and the worker who translates managements policy into action. Therefore, the role of safety training must be an on-going part of each supervisor's job.

12.01 **WEEKLY TOOL BOX SAFETY MEETINGS:**

Supervisory personnel are required to conduct weekly tool box safety meetings to provide their employees with up to date safety information and to discuss the various aspects of job safety and health. Employee attendance is required and safety meeting reports are signed by all in attendance and placed in the project file.

These tool box safety meetings encourage safety awareness, when a small group of workers get together to discuss the hazards they have encountered and the steps they can take to eliminate them. In a sense, tool box safety meetings can put employees "on the spot" that is, they demand feedback. They get employees thinking about safety and encourage them to come up with ideas and suggestions for preventing accidents.

12.02 **PLANNING SAFETY MEETINGS:**

* Safety awareness meetings should be held at least once a week during the course of the project.

* The meetings should average between ten and fifteen minutes depending upon the topic discussed, ample time should be give for employee response.

* Anything over fifteen minutes will result in unjustified interruption of production.

* Be business like but not dictatorial. Be serious enough to convince workers that the information is worth their attention.

* Be brief and to the point, go over the information mentally prior to the start of the meeting.

* During the question and answer period, listen attentively, even if you know exactly what the speaker will say. The worker may feel slighted if he is not given your full attention. Along the same line, do not argue a point with any of your workers while in front of others, discuss the point in private later.

* Give the employees the chance to select the topics.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

SAFETY RULES & REGULATIONS

13.00 **QUALITY ENVIRONMENTAL SAFETY RULES AND REGULATIONS:**

* Employees must be in working cloths and ready for work at the designated starting time.
* Employees may take lunch breaks only during designated times, and must eat in the area assigned for the specific project.
* Personnel will not quit work before the time designated for the conclusion of the work shift. There will be sufficient time for decontamination, etc.
* No employee will report to work under the influence of alcohol or drugs. Likewise, it is forbidden to carry alcohol or drugs on the job or company property.
* Personnel must comply with both verbal and written instructions from a supervisor or foreman.
* While on the job site, personnel must comply with OSHA Safety and Health Standards for the Construction Industry and as well as QEC's safety program and the customer's safety rules and regulations.
* All personal work injuries must be reported to a supervisor immediately.
* All unsafe conditions and acts must be reported immediately.
* Unless otherwise notified, hard hats must be worn while on the job.
* Employees must use their personal protective equipment as required by law, including but not limited to, head, hearing, eye, foot, and fall protection.
* When required, protective clothing, including hood and booties will be worn correctly.
* If respirators are required, they will not be removed while in the work area for any reason.
* When assigned respiratory protection equipment will be worn.
* If air sampling equipment has been attached to an individual, this equipment must be left alone and not unobstructed until removed.
* There will be no smoking on any QEC job site, unless a smoking area has been designated.
* Good housekeeping by all personnel is considered mandatory.
* Employees will not engage in malicious horseplay, practical jokes, or mischief while on the job site.
* Fighting or attempting bodily injury to another employee or company visitor is strictly prohibited, and is ground for immediate termination.
* Unauthorized use of, or willful or wanton neglect of company property or equipment is not permitted.
* The carrying of a concealed weapon is forbidden.
* Falsifying company records and/or reports will not be tolerated.
* Only the person who tags-out or locks-out equipment is allowed to remove such a tag or lock from the equipment.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

ALCOHOL AND DRUG ABUSE POLICY

14.00 ALCOHOL AND DRUG ABUSE

14.01 POLICY:

It is the policy of QEC,Inc. to prohibit the use or possession of alcoholic beverages or illegal drugs within the work place.

Any employee or subcontractor, who, while at the work place, is either determined to be, or who appears to be, under the influence of alcohol or drugs, including controlled substances, may be immediately suspended from work and instructed to leave the job pending a final disposition.

When required to do so by specific conditions of a customer's contract, QEC employees working under that contract will comply with the drug testing requirements of the customer.

14.02 PROCEDURES:

Documentation - Frequently, in the handling of an intoxicated or impaired person, the person will deny that anyone ever talked to him or her concerning the problem. It is, therefore, very important to keep complete records concerning each episode, interview, or conference. If at all possible, have another individual's supervisor or member of management, present at the time of each session.

14.03 CONFIDENTIALITY:

As an employer, we are risk defamation or libel actions if we publicize results of test or label a person an "alcoholic" or "drug user" and recklessly disclose such information to a third party who does not have a right to know.

14.04 IMPLEMENTATION:

If an employee "appears" to be under the influence of alcohol or drugs, try to get another supervisor or management personnel to personally escort the employee to the supervisors office.

If you conclude the employee is under the influence, then suspend the employee pending final determination, and in the presence of a witness, advise him/her that company safety rules were violated.

Be certain, all information, questions, answers, actions, are documented.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

DISCIPLINARY ACTION POLICY

15.00 VIOLATION/DISCIPLINARY ACTION POLICY

15.01 POLICY:

Appropriate disciplinary measures will be prepared as a management tool to foster compliance of personnel to QEC's safety program and those portions of the safety and health standards of such local, state, and federal regulatory agencies as are applicable.

15.02 GENERAL REQUIREMENTS:

* Each employee is individually responsible for complying with each of the provisions of the Corporate Safety Program, in addition to those safety instructions issued by the supervisor.

* Each employee who reports to work for QEC will be given a safety orientation as part of the general hiring practices. During this orientation, the company's positive attitude toward safety will be stressed and the employee will be advised that safety is a condition for employment. The QEC safety program will be explained and clearly defined.

* A copy of the Safety Program along with OSHA (29 CFR 1926/1910) will be present on each job.

* Each supervisor will be required to verbally issue appropriate specific safety instructions to all employees prior to assigning them to work.

15.03 DISCIPLINARY ACTION:

* A violation of the OSHA Standards or Corporate Safety Program, will be promptly corrected. The violation will be documented by the supervisor on the Written Warning for Safety Violation form.

* Individual safety rule violations will be assessed on their own merit, with appropriate consideration given to the seriousness of the violation, the effect the results of the violation may have had on other workers, the employees previous work record, and any previous safety violations.

* There are some situations where the safety violation is so serious that modifications or total disregard of progressive discipline is warranted. In these situations, the employee may be suspended or terminated at the digression of the project manager.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

TAG OUT - LOCK OUT PROCEDURE

16.00 TAG OUT/LOCK OUT PROCEDURE

16.01 PURPOSE:

To establish a procedural guideline which will insure employee protection against inadvertent operation of mechanical equipment, energizing of electrical circuits and release of pressurized or chemical fluids, including steam and water while performing work on, or in the immediate vicinity of, motor driven, electrical, or pressurized equipment.

Every effort will be made to eliminate potential situations where the unexpected energizing, start-up, or release of stored energy, or electrical current, or the release of pressurized or chemical fluids would likely to endanger personnel.

16.02 ACTION:

* The supervisor will instruct the appropriate representative of the customer and/or the facility in which the work area is located, prior to the start of work, to de-energize and render inoperative all mechanical equipment, electrical circuits, or vessels containing chemicals or pressurized fluids which are located in the immediate vicinity of the work area.

* Request the above individual to have locks or tags attached to all points where such mechanical equipment, electrical circuits or vessels containing chemicals or pressurized fluids can be energized.

* In those instances when the above activities can not be carried out by a representative of the customer or facility, it will be the direct responsibility of the supervisor to ensure and coordinate the implementation of these activities by a competent individual in some cases, this may involve the hiring of an outside electrician or plumber.

* Instruct their employees in the content and application of this standard. This will include the purpose and use of lock-out/tag-out procedures, the recognition and application of adequate methods and means of isolation of all hazardous energy sources, and the proper procedures for safely re-energizing when the work is complete.

16.03 **LOCK OUT/TAG OUT METHOD:**

* Each supervisor on the job should be provided with an individual safety lock and one key, as well as a supply of Tag Out cards.

* Pre-plan the operation to assure notification of all affected parties, if the controls are so located that only one lock can be accommodated, and more than one lock is required, a multiple lockout device should be used.

* Before allowing work to begin in the immediate vicinity of mechanical equipment, electrical circuits, or vessels or pipes containing chemicals or pressurized fluids, the main switch and/or valve for the given unit, circuit or pipe, must be de-energized and locked out in safe position and tagged accordingly. The purpose of the tag is to identify the individual who must authorize the removal of the safety precautions.

* It may be advisable to have an electrician pull the fuses from the main disconnect switch for the mechanical equipment or electrical circuit to provide additional safety precautions.

* The person making the lock out should make every effort to verify the equipment or circuits have been de-energized.

* All other personnel who have a need to use the lock out should add their lock out and tag and should verify the equipment or circuits have been de-energized.

* When work extends beyond the shift on which the lock outs were put on, they should be removed by outgoing supervisors and replaced by the incoming supervisor prior to commencing work. Each incoming supervisor should verify the equipment or circuits have been de-energized.

* Supervisors who finish their work assignment before the last job is completed should each remove their own lock and tag. When the entire job is finished, the last lock and tag should have been remove.

* Locks and tags should only be removed by the individuals placing them.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

CONFINED SPACE ENTRY POLICY

17.00 CONFINED SPACE/VESSEL ENTRY

17.01 PURPOSE:

This procedure establishes safe practices for entering and/or working in confined spaces which may be hazardous to employees. For the purpose of this procedure, confined space means any space having a limited entrance or egress which is subject to the accumulation of toxic of flammable contaminants or the development of an oxygen deficient atmosphere. Confined spaces include, but are not limited to, storage tanks, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, and open spaces more than four feet in depth, such as pits, tubs, vaults and vessels.

17.02 SEQUENCE FOR CONFINED SPACE ENTRY:

* Before any employee is allowed to enter a tank or other confined space, supervisory authorization and a CONFINED SPACE ENTRY PERMIT must be provided.

* Prior to issuance of the permit, appropriate tests of the atmosphere must be made by authorized personnel from outside the confined space to determine if established air contaminant limits are exceeded, or if the oxygen concentrations is less than 19.5 percent by volume. Test must be made with the appropriate monitoring equipment. The person authorized to monitor the atmosphere must be trained in the proper use, calibration, and care of the monitoring instruments and must remain at the site until all monitoring is completed.

* If tests indicate the atmosphere is initially safe, but work may produce a hazardous atmosphere from such processes as cutting and welding, disturbing of accumulated sludge, or use of solvents, entry without respiratory protection will only be permitted subject to additional atmosphere testing by authorized personnel.

* If test indicate that the atmosphere is unsafe, the confined space must be ventilated until the hazardous atmosphere is removed, prior to employee entry.

* If after ventilating, the test indicate an atmosphere less than 19.5 percent oxygen, or levels of toxic contaminants hazardous to health, no person will be allowed to enter unless equipped with an approved air-line respirator or SCUBA apparatus, safety harness, and life line and employee has been trained in the use if that equipment.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

LADDER USE AND SAFETY

18.00 LADDER USE AND SAFETY

18.01 PURPOSE:

To provide appropriate guidelines for use in the selection and design for the use intended, in the construction of job built ladders, and in the maintenance, inspection, and proper use of ladders.

18.02 POLICY:

No QEC employee will be allowed to use, for any reason, any ladder that has broken, loose, or cracked rungs, side rails, or braces. Any ladder found in this condition will be immediately removed from service.

All requirements of the OSHA Standard for Ladders, 29 CFR 1926.450 will be considered a part of this standard.

Since both metal straight ladders and metal step ladders are electrical conductors, neither will be used during asbestos abatement operations.

18.03 LADDER SELECTION:

STRAIGHT ladders must be selected to be of sufficient length to extend not less than thirty-six inches (36") above any platform or landing they serve.

All portable straight ladders must be equipped with approved safety shoes.

All metal ladders are electrical conductors. Their use around electrical circuits of any type, or places where they may come in contact with such circuits, is not recommended. Metal ladders should be marked with signs reading "CAUTION DO NOT USE AROUND ELECTRICAL EQUIPMENT".

STEP ladders, sometimes referred to as "A" frame ladders, must have positive locking spreaders which will be fully spread and locked when in use.

Step ladders will not be used as straight ladders. They should be of sufficient height to preclude the necessity of employees using the top step of the ladder. Workers will not be allowed to work from the top step of a step ladder.

Step ladders should be firm and well constructed. Since step ladders are not tied off, when an employee is working on a step ladder 10 feet or more above the floor, the ladder must be held by another employee.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

PERSONAL PROTECTIVE EQUIPMENT

19.00 PERSONAL PROTECTIVE EQUIPMENT

19.01 PURPOSE:

To insure the use of appropriate company approved personal protective equipment for all QEC personnel, visitors, and subcontractors who either are, or may be, engaged in or exposed to hazardous working conditions.

QEC corporate policy mandates the correct use of approved personal protective equipment wherever and whenever there is a potential for exposure, either real or assumed, to hazardous working conditions, or where a hazardous condition exist and a need is indicated for using such equipment to adequately reduce the hazard to its personnel, visitors or subcontractors.

19.02 PROTECTIVE EQUIPMENT:

HARD HATS - All construction workers must wear company issued hard hats at all times when working on construction sites or in a "HARD HAT AREA". Hard hats must not be altered by drilling or cutting or display excessive stickers or logo's. Headband assemblies must be in good repair and should be exchanged whenever they become broken or weakened.

GLOVES - Where needed, construction workers should wear work gloves in good condition which are suited for the type of work being performed.

SHOES AND BOOTS - Safety shoes are recommended for use by all construction workers. All safety shoes should meet nationally recognized standards. When working with wet concrete or asbestos, workers must wear rubber boots. Shoes should be kept in good repair and replaced when excessive wear is noticed.

EYE AND FACE PROTECTION - Must be worn whenever warranted by the exposure. Safety glasses must be worn in all circumstances where there is exposure to flying particles, and face shield must be worn when grinding or chipping.

SAFETY BELTS AND LIFELINES - Must be worn by all employees who are working at an elevated level, which are not protected by handrails or when working from suspended scaffolding, or exposed to falls from a height of 10 feet or more. The same applies if the employee is working over operating machinery, moving equipment, or objects posing an impalement hazard, or in the case of entering a confined space.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

RESPIRATOR PROTECTION PROGRAM

QUALITY ENVIRONMENTAL CONTRACTORS, INC.
RESPIRATOR PROTECTION PROGRAM

INTRODUCTION:

This written respiratory program for Quality Environmental Contractors, Inc. (Q.E.C.) has been established in accordance with the respiratory protection requirements of 29CFR 1910.134, 29CFR 1926.103, 1926.58 and 29CFR 1910.1001. This program is specific to asbestos and lead abatement activities conducted by QEC.

During demolition, removal, construction (alteration, repair, maintenance, renovation) involving cleanup, transportation and disposal of lead or asbestos containing materials, employees may be exposed to concentrations of lead or asbestos greater than the PEL. For the subject demolition, removal, construction, cleanup, transportation and disposal activities, QEC provides respiratory protection for all employees working in or on demolition, removal, construction, cleanup, transportation, and disposal. In addition to providing respiratory equipment, QEC has the responsibility of implementing the respiratory program. The following sections provide for the establishment of standard operating procedures for the respiratory protection of all QEC employees.

DESIGNATION OF THE PROGRAM ADMINISTRATOR

Our program administrator responsible for the implementation of and to the provisions of the respirator protection is Tony Incardona.

SELECTION AND USE OF RESPIRATORY PROTECTIVE EQUIPMENT

Respirators are selected from those approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) for the use in atmospheres containing asbestos fibers and lead particles. The NIOSH approved respirator contains an assigned identification number on each unit.

The approved respirator shall be worn for the existing working conditions specified on the following selection chart.

RESPIRATOR SELECTION GUIDE FOR ASBESTOS

AIRBORNE CONCENTRATION OF ASBESTOS, TREMOLITE, ANTHOPHYLLITE, ACTINOLITE, OR A COMBINATION OF THESE MINERALS.	REQUIRED RESPIRATORS AND RESPIRATORS USED
Not in excess of 2 f/cc (10xPEL)	1. Half mask air-purifying respirator equipped with high-efficiency filters.
Respirators to be used:	North 7700-30S, or 7700-30M, or 7700-30L North N75008
Not in excess of 10 f/cc (50xPEL)	1. Full facepiece air-purifying respirator equipped with high-efficiency filters.
Respirators to be used:	RACAL 24-00-0L Full Facepiece TL 21C 353 High Efficiency Filter.
Not in excess of 20 f/cc (100xPEL)	1. Any powered air-purifying respirator equipped with high efficiency filters. 2. Any supplied-air respirator operated in continuous flow mode.
Respirators to be sued:	RACAL Supplied Air Version (with cartridges for egress employees only).
Not in excess of 200 f/cc (100xPEL)	1. Full facepiece supplied-air respirator operated in pressure demand mode.

RESPIRATOR SELECTION GUIDE FOR LEAD

If exposure levels are at or above the PEL, respirators should be provided according to the following table. All respirators must be NIOSH approved. In each case the minimum requirement is shown.

LEAD	RESPIRATOR TYPE
200 TO 499 ug/m3	Half-face piece. HEPA filtered.
500 to 2499 ug/m3	Full facepiece, HEPA filtered
2500 to 49,999 ug/m3	Powered-air purifying respirator with HEPA filters
50,000 to 99,999 ug/m3	Positive pressure, supplied-air, full facepiece, hood or helmet
100,000 up/m3 and up	Full facepiece SCBA

Powered-air purifying respirators. A full facepiece powered-air purifying respirator, a powered-air purifying respirator will be issued to any employee of Q.E.C. in lieu of the negative-pressure respirator when any employee chooses to use this type of respiratory protection.

THE WORKER IS EXPOSED

For the purpose of this program, the only hazard considered is airborne asbestos fibers. Accordingly, during any asbestos abatement project directly disturbing insulation (known to contain asbestos), the competent person with known historical data of possible exposure levels will establish the level of respiratory protection to be used for the project if job specifications allow this decision.

SURVEILLANCE

Only those individuals who are medically able to wear respiratory protective equipment shall be issued one. Before being issued a respirator, an employee will receive pertinent test for medical and physical conditions. Medical tests to be considered by a physician include: pulmonary function tests (FVC and FEV), chest Xray, electrocardiogram, and any others deemed appropriate by the examining physician. Medical factors to be considered by a physician include: emphysema, asthma, chronic bronchitis, heart disease, anemia, hemophilia, poor eyesight, poor hearing, hernia, lack of use of fingers or hands, epileptic seizures, and other factors which might inhibit the ability of an employee to wear respiratory equipment.

RESPIRATOR FIT TESTS

Each employee determined medically fit to wear a respirator will be fit-tested (using irritant smoke) upon receiving the equipment and semiannually thereafter.

Problems in fitting a respirator may result if facial hair prevents a good seal from forming between the skin and sealing surface. Corrective lenses that have temple bars or straps may prevent proper sealing and should not be used when a full-face respirator is worn. An adaptor kit to accommodate eyeglasses is purchased from the manufacturer. Contact lenses will not be worn while wearing a respirator. The properly fitted respirator may stretch the skin around the eyes, thus increasing the possibility that the contact lenses will fall out.

The following procedure will be taken for the proper fitting of negative pressure respirators:

IRRITANT FUME PROTOCOL

A. Respirator Selection

1. Respirators will be given to employees from respirators that are equipped with a combination of high-efficiency and acid-gas cartridges.

B. Fit Test

1. The employee will be allowed to smell a weak concentration of the irritant smoke to familiarize the subject with the characteristic odor.

2. The employee shall properly don the respirator selected as above, and wear it for at least 10 minutes before starting the fit test.

3. The test conductor shall review this protocol with the test subject before testing.

4. The employee shall perform the conventional positive pressure and negative pressure fit checks. Failure of either check shall be cause to select an alternate respirator from a different size or style.

5. Break both ends of a ventilation smoke tube containing stannic oxychloride. A short length of tubing is attached to one end of the smoke tube, the other end of the smoke tube will be attached to a low pressure air pump set to deliver 200 millimeters per minute, or .2 lt. per minute.

6. The employee will be advised that the smoke can be irritating to the eyes and will be instructed to keep his/her eyes closed while the test is performed.

7. The test conductor shall direct the stream of irritant smoke from the tube towards the face seal area of the employee. The person conducting the test shall begin with the tube at least 12 inches from the facepiece and gradually move to within one inch, moving around the whole perimeter of the mask.

8. The employee shall be instructed to do the following exercises while the respirator is being challenged by the smoke. Each exercise shall be performed for one minute.

   a. Breathe normally.

   b. Breathe deeply. Be certain breaths are deep and regular.

   c. Turn head all the way from one side to the other. Be certain movement is complete. Inhale on each side. Do not bump the respirator against the shoulders.

   d. Nod head up-and down. Be certain motions are complete and made every second. Inhale when head is in the full up position (looking toward ceiling). Do not bump the respirator against the chest.

   e. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements and thus be useful to satisfy this requirement.

RAINBOW PASSAGE

When the sunlight strikes raindrops in the air, they act like prism and form a rainbow. The rainbow is a division of whit light into many beautiful colors. These take the shape of a lon round arch, with its path high above, and its two ends apparentl beyond the horizon. There is, according to legend, a boiling po of gold at one end. People look, but no one ever finds it. Whe a man looks for something beyond his reach, his friends say he i looking for the pot of gold at the end of the rainbow.

f. Jogging in place.

g. Breathe normally.

9. The employee shall indicate to the test conductor if the irritant smoke is detected. If smoke is detected, the test conductor shall stop the test. In this case, the tested respirator is rejected and another respirator size and style shall be selected.

10. Each employee passing the smoke test (i.e., without detecting the smoke) shall be given a sensitivity check of smoke from the same tube to determine if the employee reacts to the smoke. Failure to evoke a response shall void the fit-test.

11. Steps 4, 9, and 10 of this fit-test protocol shall be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agents.

12. Respirators successfully tested by the protocol may be used in contaminated atmospheres up to 10 times the PEL of asbestos.

13. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

14. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive pressure respirator such as powered air-purifying respirators, supplied-air respirator, or self-contained breathing apparatus.

15. In addition, because the sealing of the respirator may be affected, qualitative fit testing shall be repeated immediately when the test subject has a:

    a. Weight change of 20 pounds or more;

    b. Significant facial scarring in the area of the facepiece seal;

    c. Significant dental changes; i.e., multiple extractions without prosthesis or acquiring dentures;

    d. Reconstructive or cosmetic surgery; or

    e. Any other condition that may interfere with facepiece sealing.

C. Recordkepping

1. A summary of all test results shall be maintained in the office employee file. The summary includes:

    a. Name of test subject.

    b. Date of testing.

    c. Name of test conductor.

    d. Respirators selected (indicate manufacturer, model, size and approval number).

    e. Testing agent.

RESPIRATOR ASSIGNMENT AND MAINTENANCE

Respirators are assigned to individual workers for their exclusi use. A system of recordkeeping is established to document all em ployees who have respiratory protection equipment, and the peri odic cleaning and maintenance of equipment.

Respirators are regularly cleaned and disinfected. Those issue for the exclusive use of one worker shall be cleaned after eac day's use, or more often, if necessary. Those used by more tha one worker shall be thoroughly cleaned and disinfected after eac use. This procedure is described as follows:

1. Before leaving the work arae, each user must "wipe-down" the respirator with a wet cloth to remove any asbestos-containing material which may have settled on the equipment.

2. Respiratory equipment shall be washed with detergent in warm water using a brush. If possible, detergents containing a bactericide should be used. Organic solvents are not used, as they deteriorate the rubber facepiece. If bactericide detergent is not available, the detergent should be followed with a disinfecting rinse. Two types of disinfectants may be made from readily available household solutions. A hypochloride solution (50ppm) can be made by adding two tablespoons of chlorine bleach to one gallon of water. An aqueous solution of iodine (50 ppm) can be made by adding one teaspoon tincture of iodine to one gallon of water. A two minute immersion of respirator into either solution would be sufficient for disinfection.

3. Respiratory equipment shall be thoroughly rinsed in warm, clean water (120 degrees F maximum) to remove all traces of detergent, cleaner and sanitizer, and disinfectant.

4. Respirator equipment is allowed to air dry on a clean surface or hung from a horizontal wire.

When not in use, respiratory equipment shall be sealed in bags (plastic or cloth) and stored in a single layer with the facepiece and exhalation valve in a non-distorted position.

Repair or replacement of component parts must be done by individuals and by each employee.

Inspection for defects in respiratory equipment must be done before and after each use and during cleaning. The primary defects to look for in the inspection of component parts of the respiratory equipment and corrective actions when appropriate are itemized as follows:

1. Air purifying respirators (quarter-mask, half-mask and full facepiece):
   a. Rubber facepiece - check for:
      - excessive dirt (Clean all dirt from facepiece).
      - cracks, tears, or holes (obtain new facepiece).
      - distortion (allow facepiece to "sit" free from any constraints and see if disorder disappears; if not, obtain new facepiece.
      - cracked, scratched, or loose fitting lenses (contact respirator manufacturer to see if replacement is possible; otherwise, obtain a new facepiece).

   b. Headstraps - check for:
      -breaks or tears (replace headstraps).
      -loss of elasticity (replace headstraps).
      -broken or malfunctioning buckles or attachments (obtain new buckles).
      -allowing facepiece to slip (replace headstrap).

   c. Inhalation valve, exhalation valve - check for:
      -detergent residue, dust particles, or dirt on valve or valve seat (clean residue with soap and water).
      -cracks, tears, or distortion in the valve material or valve seat (contact manufacturer for instructions).
      -missing or defective valve covers (obtain new cover from manufacturer).

   d. Filter element(s) - check for:
      -proper filter for the hazard.
      -approval designation.
      -missing or worn gaskets (contact manufacturer for replacement).
      -worn threads - both filter threads and facepiece threads (replace filter or facepiece, whichever is applicable).
      -cracks or dents in filter housing (replace filter).
      -missing or loose hose clamps (obtain new clamps).

2. Atmosphere Supplying Respirators

a. Check facepiece, headstraps, valves, and breathing tube as for air-purifying respirators.

b. Hood, helmet, blouse or full suit (if applicable)-check for:
-headgear suspension (adjust properly for individual).
-cracks or breaks in face shield (replace face shield).
-protective screen - check to see that it is intact and fits correctly over a face shield, abrasive blasting hoods, and blouses (obtain a new screen if faulty).

c. Air supply system - check for:
-breathing air quality.
-breaks or kinks in air supply hoses and end fitting attachments (replace hose and/or fittings when needed.
-tightness of connections.
-proper setting of regulators and valves (consult manufacturers recommendations).
-correct operation of air-purifying elements and carbon monoxide or high temperature alarms.

EMPLOYEE TRAINING PROGRAM

A training session with required employee attendance is conducte by the Program Administrator to ensure that employees understan the limitations, use and maintenance of respirator equipment, an other important aspects of the respiratory protection program Upon completion of the fit-testing and training, each employe must read and sign an acknowledgment form. This training sessio will include a slide program and a question and answer session.

SURVEILLANCE OF WORKING CONDITIONS

Air sampling will be conducted before, during and after eac project requiring respiratory equipment. Respiratory equipmen used must be suitable for the asbestos concentrations expected t occur in the work area. No one shall work alone. Employees ar instructed to immediately leave the work area should they experi- ence physical stress such as difficulty in breathing or dizziness

RESPIRATOR PROGRAM SUPERVISION

Our respirator program is evaluated at least annually with program adjustments, as appropriate, made to reflect the evaluation results. Compliance to the aforementioned points of the program should be reviewed; respirator selection, purchase of approved equipment, medical screening of employees, fit testing, issuance of equipment and associated maintenance, storage, repair, inspection and appropriate surveillance of the work area conditions.

Attention is given to proper recordkeeping. Records that are kept include: employees trained in respirator usage, medical records of each respirator user, airborne concentrations of asbestos fibers before, during and after the work is conducted, and any problems encountered during the renovation or demolition activities.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

HAZARDOUS COMMUNICATION PROGRAM

HAZARD COMMUNICATION PROGRAM

Revised 3/1/93

1.0 PURPOSE

The purpose of this written Hazard Communication Program is to inform our employees, by means of labels, Material Safety Data Sheets and Training, of the physical and health hazards to which they may be exposed. This written program meets the requirements of OSHA's Hazard Communication Standard for the Construction Industry, 29 CFR 1926.59

2.0 SCOPE

This section applies to all QEC operating units.

3.0 POLICY

QEC , as an employer engaged in a business where chemicals are either used or produced for use or distribution, or where its workers have the potential for contact with chemicals in their workplace, will ensure that the hazards of all chemicals found in the workplace will be evaluated, and that information concerning their hazard will be transmitted to all affected employees. Accordingly, this program describes how this criteria will be met.

4.0 STATE RIGHT-TO-KNOW

Many states and local communities have adopted employee "Right-to-Know" laws. Most of these local laws contain not only the provisions of the Federal Standard, but often times go far beyond in their compliance requirements. However, the courts have ruled that the Federal OSHA Standard would pre-empt all state and community Right-to-Know laws for all employers with respect to those requirements that are covered by the federal standard.

This does not mean that QEC is exempt from all of the requirements of state Right-to-Know laws. According to OSHA, employers need not comply with the labeling, MSDS and training requirements of state laws. However, each state law is different, and in some areas additional requirements must still be met, such as annual reports, community notification of hazardous chemicals, employee right of refusal to work, additional hazardous chemical sources, etc.. Each state and local community must be checked to determine their local requirements regarding hazardous chemicals.

5.0 AUTHORITY

5.1 HAZARD COMMUNICATION PROGRAM

This written Hazard Communication Program is required by 29 CFR 1926.59 (e), and although the length and complexity of the program may vary from division to division within the QEC organization, the program must address the issues of the Standard in sufficient detail to ensure that a comprehensive approach to hazard communication has been developed.

5.2 EFFECTIVE DATES

The effective date of this OSHA Standard now requires that all QEC divisions be in complete compliance with the requirements of the OSHA Hazard Communication Standard.

5.3 AVAILABILITY

In accordance with the requirements of paragraph (e) of the Standard, a copy of this program is available, upon written request, to all employees, their designated representatives, the Assistant Secretary of Labor and the Director of OSHA. In order to facilitate this availability, a copy of this program is contained in all Master and Field MSDS Binders, a copy of which must be physically located on each job site.

5.4 EXEMPTIONS

There are two types of exemptions from this program, and they are as follows.

5.4.1 The following materials or operations are exempt from the provisions of this Standard:

a. Any hazardous waste which is subject to the regulations of the Environmental Protection Agency (EPA);

b. Toxic substances used in the workplace which are in the same form, volume, concentration, and for the same use as commonly sold by retail outlets as consumer goods;

c. Any consumer product used in the workplace in the same manner as normal consumer use which will not result in a duration and frequency of exposure greater than consumer exposure;

d. Tobacco or tobacco products;

e. Wood or wood products;

f. Articles; and

g. Foods, drugs, or cosmetics for personal consumption by employees in the workplace.

5.4.2 When labeled in accordance with federal requirements, the following substances shall be exempt only from the labeling provisions of the Standard.

a. Pesticides subject to EPA's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) labeling requirements;

b. Food, drug or cosmetic material subject to labeling requirements of the Food and Drug Administration (FDA);

c. Distilled spirits, wine or malt beverages subject to labeling requirements of the Treasury's Bureau of Alcohol, Tobacco and Firearms (BATF); and

d. Consumer products subject to labeling requirements of the Consumer Products Safety Commission.

6.0 HAZARD DETERMINATION

6.1 SOURCES

OSHA has established a minimum number of chemicals which are considered hazardous and are covered by the Standard. These are:

a. Chemicals listed by OSHA in 29 CFR 1910. Subpart Z. Toxic and Hazardous Substances; and

b. Chemicals listed by ACGIH in Threshold Limit Values for Chemical Substances in the Work Environment.

These lists provide a base of over 600 regulated substances. QEC is responsible for determining the hazards associated with each of these chemicals when they are used in the work place or shipped by QEC to another location. In addition, OSHA has decided what will constitute a carcinogen under the Hazard Communication Standard, and that is, any chemical listed as a confirmed or suspected carcinogen by the following:

a. The National Toxicology Program's Annual Report on Carcinogens;

b. The International Agency for Research on Cancer's Monographs; and

c. OSHA's 29 CFR 1910, Subpart Z, Toxic and Hazardous Substances.

6.2 RESPONSIBLE PARTY - ADMINISTRATOR

Since each division within QEC is now required to comply with the provisions of this Section, each Division Manager, or his designate, will be named Administrator of the program and will be charged with the primary responsibility for all aspects of the Hazard Communication Program within the division. The Division Manager, or his designate, will have overall responsibility for: establishing the chemical inventory; providing the hazard assessment, based upon the chemicals Material Safety Data Sheet (MSDS); obtaining and providing additional information on the hazardous chemicals; overseeing the company's labeling program; identifying and providing appropriate emergency procedures if necessary; and supervising the training program.

The Division Manager, herein referred to as the Administrator, will designate this responsibility to the senior supervisor on each job site in order to insure that each project has implemented an up-to-date Hazard Communication Program.

6.3 HAZARD ASSESSMENT

QEC has chosen to rely on the evaluation and determination of the chemical by the chemical manufacturer and importer and the use of the Material Safety Data Sheet which they have provided, to satisfy the requirements of 29 CFR 1926.59 (d) Hazard Determination.

6.3.1 QEC will rely, in good faith, on the MSDS received with all hazardous chemical shipments, or soon thereafter in the case of missing or updated MSDS's, from the chemical manufacturer, importer or distributor. The Division Manager is charged with the responsibility for ensuring that the most current MSDS's are posted in the Master and Field MSDS Binders. If new and significant information concerning the potential health hazard of a chemical in the work place is uncovered, then the safety manager will ensure that either an updated MSDS is obtained from the supplying source, or in the event such MSDS is not available, that the new information is added to the appropriate section of the existing MSDS within two (2) months of his being advised of the new information.

6.3.2 QEC will rely solely on the MSDS and will not utilize any in-house alternatives to the MSDS for hazard assessment.

6.3.3 Since QEC does not have access to the written procedures maintained by the chemical manufacturer or importer, should a problem arise with the information received which can not be resolved with the supplier, the matter will be referred to the nearest OSHA office for investigation.

6.3.4 In the event QEC should become a "chemical manufacturer", due to a chemical being produced during a process of any type, and should QEC employees become either exposed or potentially exposed, the chemical will be evaluated in accordance with the provisions of the Standard by an appropriate outside chemical laboratory who will also be requested to provide a completed MSDS on the basis of their analysis of the chemical.

6.3.5 Should an QEC division find it necessary to mix two or more chemicals, and the mixture has already been tested as a whole by any of the suppliers to determine its hazards, the results of this testing will be requested on an MSDS for the mixture as a whole. If this mixture has not been tested as a whole, then paragraphs (d)(5)(ii), (iii) and (iv) of the Standard will be used as the procedure for determination of the hazard. Should this become necessary, the procedures used to evaluate this mixture will be described in writing and attached to the completed MSDS.

NOTE: Ingredients of less than 1% of the mixture must be identified if there is evidence that the ingredients could be released from the mixture in concentrations that

would exceed a maximum threshold limit or present a health hazard.

6.4 HAZARDOUS CHEMICAL INVENTORY

The Hazardous Chemical Inventory must be site specific!

The designated supervisor will immediately, and throughout the length of the project, conduct an inventory of all chemicals within the work place. Using the appropriate MSDS for each of these chemicals, he will make an accurate assessment as to whether or not these chemicals contain a hazardous substance. In the event the MSDS shows the chemical to contain a hazardous substance, he will then enter this chemical onto the job site Hazardous Chemical Inventory sheet, completing the inventory form as instructed.

He will then take the necessary steps to ensure that each of these hazardous chemicals are appropriately labeled with an HMIS label and that the chemical's MSDS is placed in the Hazardous MSDS section of the Field MSDS Binder which is located at the job site.

The supervisor will also determine whether or not there are any missing MSDS's and that such, if any, have been requested from the Administrator.

7.0 MATERIAL SAFETY DATA

7.1 MATERIAL SAFETY DATA SHEETS (MSDS)

The Material Safety Data Sheet (MSDS) is the primary document in the hazard communication program. The Standard requires manufacturers and importers to provide an MSDS with the chemicals they ship and requires employers to have an MSDS on each hazardous chemical they use. We can not overstate the importance of the MSDS. This form contains all known hazard and protection information on a hazardous chemical. It is the one place everyone should look before starting any job involving hazardous chemicals and any time there is a question about a particular chemical's risks or means of protection.

7.1.1 Acquiring The Material Safety Data Sheets (MSDS)

The Administrator and the division purchasing agent are responsible for obtaining an MSDS on each chemical substance or compound entering the work place. The normal procedure for acquiring an MSDS will be to place a notice on all purchase orders requiring the supplier to comply with the MSDS requirements of the Standard. Indicate on the

The supplier has thirty (30) days in which to respond. A follow-up letter should be sent if the MSDS is not received within the thirty (30) day period. This second request should be accompanied by a telephone call.

If the MSDS is not received within ten (10) working days following this second request, a certified letter requesting the MSDS should be sent to the supplier. Continued absence of the MSDS within the ten (10) working days following the certified letter should result in the filling of a written complaint with the nearest OSHA regional office or appropriate state agency. One other possibility is to seek an alternate supplier who can guarantee an immediate MSDS.

Complete documentation must be maintained on all request for an MSDS, from the initial request on the purchase order through the letter of complaint with the appropriate regulatory agency, including all telephone calls.

NOTE: One of the most important aspects of state Right-to-Know laws is documentation. Therefore, it is imperative that carefully document all communication with both suppliers and customers when dealing with hazardous chemicals and MSDS's.

7.1.2 Distribution

The Administrator and the individual in-charge of shipping are responsible for ensuring that a current MSDS accompanies all initial shipments of hazardous chemicals to any customer.

NOTE: When a customer requests that QEC furnish an MSDS for a hazardous chemical that is listed as an exemption, a letter from QEC indicating this exemption will be sufficient response to this request. However, whenever an MSDS is sent to the customer, every effort should be made to send a copy of the original MSDS from the manufacturer of the chemical.

The Administrator is responsible for the distribution of all new or updated MSDS's to the Master MSDS Binder and all Field MSDS Binders.

7.1.3 Maintenance of Records

OSHA does not require that either the MSDS or the chemical

only be maintained on a current status and to the extent required by OSHA's Employee Access to Exposure and Medical Records, as specified in 29 CFR 1910.20. However, while neither MSDS's nor chemical inventories have to be kept for a specified period of time, this is only true provided some other record of identity and where and when the hazardous chemical was used, is kept for a period of thirty (30) years.

Therefore, QEC has made the decision to keep both the Hazardous MSDS's and the Hazardous Chemical Inventories for the thirty (30) year period specified in the Records Access Rule. Refer to paragraph 7.2.3 of this section. It is the responsibility of the individual supervising the project to ensure that the Field MSDS Binders are maintained up-to-date for immediate employee access.

7.1.4 Employee Request for MSDS

Any employee or employee representative has the right to request a copy of a Material Safety Data Sheet. In order to facilitate this request, the employee, or representative, must complete the Employee Request for Material Safety Data Sheet form. One form must be completed for each MSDS requested. Every effort will be made to comply with this request as quickly as possible. A copy of the completed form must be placed in the employee's personnel file for thirty year retention.

7.2 MSDS BINDERS

The MSDS is one of the mechanisms used by QEC to transmit required information on hazardous chemicals to its employees. This is accomplished by placing a copy of the MSDS for each hazardous chemical in the work place into a binder. For field locations, this is known as the Field MSDS Binder. In addition to the field locations, there must also be one central location within the company where all master copies of the MSDS are maintained. This is known as the Master MSDS Binder.

7.2.1 Master MSDS Binders

A Master MSDS Binder must be maintained in the office of the Administrator. As a master file, this binder should be complete and up-to-date at all times. The master file should have all written back-up material attached directly to the MSDS. For example, if a worksheet is used for generating the Hazardous Materials Identification System (HMIS) rating for the label identifying the hazards of the chemical, the worksheet should be attached to the MSDS of this chemical.

the Master MSDS Binder must also have copies of all Hazardous Chemical Inventory sheets, a copy of the company's written Hazard Communication Program, and a copy of the OSHA Standard.

7.2.2 Field MSDS Binders

The OSHA Hazard Communication Standard mandates there be an MSDS in the Field MSDS Binder for each substance listed on the job site's Hazardous Chemical Inventory. Refer to the Inventory in section 5 of the Field MSDS Binder.

The number of Field MSDS Binders required for each division will vary, however there must be at least one Field MSDS Binder at every job site or large work area within a job site, where hazardous chemicals are used. On some very large jobs, where workers are located on several different floors, it may necessitate having more than one Field MSDS Binder on the same job site. Where employees must travel between workplaces during a workshift, i.e., their work is carried out at more than one geographical location, the Field MSDS Binder may be kept at a central location at the primary workplace facility. In this situation, the MSDS's must be immediately available to the employees in an emergency situation. The location of each Field MSDS Binder on a job site must be posted for employee information.

The Field MSDS Binder will consist of a hard cover three-ring notebook which is to be prominently located at each job site and which is to contain the following:

1. A copy of QEC 's Hazard Communications Program;
2. A copy of OSHA's Hazard Communication Standard, 29 CFR 1926.59;
3. An MSDS Glossary;
4. A basic list of those chemicals regulated under the Hazard Communication Standard;
5. The job sites Hazardous Chemical Inventory list;
6. A complete set of MSDS for each chemical listed on the Hazardous Chemical Inventory;
7. The Hazcom Training Program;

9. Copies of the Hazcom Training Forms; and

10. Although not required by OSHA, it may be desirable to maintain a set of MSDS's for each of the non-hazardous chemicals located on the job site. Even though these chemicals are not considered to be hazardous, the purpose of having their MSDS's available in the Binder is two fold: (1) to make them readily accessible to a physician in the event an employee is involved in an accident while using the chemical, and (2) to show that the chemical was analyzed to be non-hazardous and not just overlooked.

7.2.3 At Completion of Project

When the project has been completed, a copy of the Hazardous Chemical Inventory and the respective Material Safety Data Sheets, as well as the Hazard Communication Training Log and the Hazcom Training Identification List must become a part of the permanent job file and retained for a period of at least thirty years.

7.3 TRADE SECRETS

Most state Right-to-Know laws, as well as the Federal Standard, provide protection for trade secrets in varying degrees. If trade secret information is withheld on the MSDS, all other information must be provided on the substance's properties and effects. The MSDS must also indicate the category of information being withheld, and the claim of a trade secret must be able to be supported. The specific chemical identity that may be withheld includes the chemical name, CAS number, or any other information which could reveal the precise chemical designation of the substance.

However, should QEC utilize the trade secret portion of the Standard, they must issue some type of identity to the chemical which can be tied directly back to a complete MSDS which identifies the chemical and its hazards. Should a treating physician or health care professional determine that a medical emergency exists, QEC must immediately disclose any necessary trade secret information that will assist the medical professionals in handling the emergency. QEC may however, require the health care professional who requested the information to sign a confidentiality agreement.

In non-emergency situations, workers, their representatives, occupational health nurses and occupational health professionals may request trade secret information and QEC will provide this information if the request is in writing, it adequately explains the need for the information, describes the measures that will be taken to prevent further disclosure of the information,

and the individual requesting the information will be willing to sign a confidentiality agreement. Disagreements on disclosure will, in all probability, be settled by OSHA.

8.0 HAZARDOUS MATERIALS IDENTIFICATION

8.1 CONTAINER LABELING (Hazardous Chemicals Only)

Each container of a hazardous chemical will have a warning label. The labeling system adopted by QEC is not intended to be the sole or the most complete source of information regarding the nature or identity of the hazardous chemicals within the work place. The identity of the chemical, as it is shown on the label, could be any term the company wishes to use, as long as it also appears on the MSDS for that chemical, along with its precise chemical name.

In doing this, it allows the company to use a common term familiar to the employees of this particular company, while still providing them with more extensive information including specific chemical identities on the MSDS. This is not true of shipped containers of hazardous chemicals.

The Administrator and the individual in charge of the shipping department are responsible for ensuring that containers of hazardous chemicals which are shipped from the work place are marked with the identity of the chemical, the appropriate health warning, the target organ effects of the chemical, and the name and address of the chemical manufacturer, importer, or other responsible party.

QEC is not required to label small portable containers into which hazardous chemicals are transferred from labeled containers, as long as these portable containers are intended only for the immediate use of the employee who performs the transfer.

8.2 HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

The HMIS is a comprehensive color coded labeling system covering both hazard assessment and hazard communication. Hazard assessment involves the collection and evaluation of MSDS's and the development of numerical ratings for the acute health, flammability and reactivity hazards of the chemical, the designation of chronic health hazards, and the assignment of a personal protective equipment index.

The hazard communication portion of the HMIS program communicates information on the chemicals identity, its degree of acute health, flammability, and reactivity hazards, its chronic health hazards, and the proper personal protective equipment that must be used when exposed to the hazardous chemical.

The chemicals identity is conveyed by a chemical, trade or brand name, by a chemical code number, or by some other descriptive term which clearly identifies the chemical to the work force and for hazard. evaluation purposes. The acute health, flammability and reactivity hazards are communicated by numerical ratings, and the chronic health hazard is communicated by an asterisk on the label which is tied to descriptive information on the MSDS. An alphabetical designation is used to denote a single item, or a combination of items, of personnel protective equipment appropriate for use when exposed to the hazardous chemical. The HMIS label utilizes a four-color rectangle or square, which is affixed to the chemical container, conveyance, or piping system, etc..

8.2.1 Work Place Labels

LABELS USED ON CONTAINERS OF HAZARDOUS CHEMICALS WHICH DO NOT LEAVE THE WORK PLACE.

The use of the standard HMIS label, as identified below, may be used on all containers which remain within the work place. The standard label is described as follows:

White space	-	Chemical name
Blue space	-	Health hazard
Red space	-	Flammability hazard
Yellow space	-	Reactivity hazard
White space	-	Personal Protective Equipment

8.2.2 Shipping Labels

LABELS USED ON CONTAINERS OF HAZARDOUS CHEMICALS WHICH ARE SHIPPED OUT OF THE WORK PLACE.

In the case of shipped containers of hazardous chemicals, the label must also include the target organ effects of the hazardous chemical. In addition to the information contained in the standard HMIS label, the shipping HMIS label must also contain the following information:

Health hazards
Immediate and Delayed Target Organ Effects
Routes of Entry
Physical hazards
Name and address of chemical manufacturer, importer, or other responsible party

8.3 COMPLETING THE HMIS LABEL

The Administrator, or the designate, is responsible for ensuring that proper hazard assessment and protective equipment ratings appear on all HMIS labels used for identifying hazardous chemicals in the work place. The Administrator should be assisted by work area supervisors in ensuring that all such containers in the work place are properly labeled, stenciled or tagged. The appropriate information concerning the chemical should be written directly onto the HMIS label with an indelible felt-tip marking or writing pen.

Stockroom or warehouse receiving supervisors are responsible for ensuring that all containers of hazardous chemicals received at the dock or coming into a QEC facility are free from damage and/or leaks prior to their acceptance. They are also responsible for ensuring that all such chemicals received are properly identified and that the appropriate HMIS label is displayed on or affixed to the container before it is removed from the receiving area for either storage or delivery to the work area.

The designated supervisor is responsible for determining the hazard assessment of all chemicals in the work place. Whenever an updated MSDS is received, it is his responsibility to see that the appropriate MSDS in each Master and Field MSDS Binder is replaced with the updated MSDS, and if a change in the acute health, flammability or reactivity hazard, or the personal protective equipment appropriate for exposure to the hazard, is indicated by the updated MSDS, that existing labels on all such chemicals are replaced to reflect the updated hazard evaluation and communication information.

QEC does not have a written alternative to the HMIS labeling system and the procedures described herein.

9.0 CONTRACTOR NOTIFICATION

In accordance with the OSHA Standard, all contractual agreements with on-site contractors will contain a notification advising the contractor of QEC 's Hazard Communication Program and requiring the contractor to make himself, and those of his employees that will be working at one of QEC 's facilities or work sites, to become familiar with the provisions of the QEC Hazard Communication Program.

In the event the contractor will be performing his work in an area where QEC is working with or storing hazardous chemicals, the contractor must be given a verbal orientation on the QEC program by the designated supervisor and the location of the nearest Field MSDS Binder, including a copy of QEC 's Hazard Communication Program and the Hazardous Chemical Inventory for that area. In addition, each member of the contractor's work party must be given a copy of the Hazard Communication brochure and one of the wallet size HMIS card which they will be required to carry with them while in the work area.

10.0 ORIENTATION AND TRAINING (Routine Tasks)

QEC has established an initial orientation and on-the-job training program for each employee who may come into contact with, or be exposed to, a hazardous chemical in the work place. QEC believes that color coded warning labels, Material Safety Data Sheets, Hazardous Chemical Inventories, and a specific orientation and training program, all play an equally important part in their Hazard Communication Program.

Each QEC employee, who is affected by the OSHA Hazard Communication Standard, must be informed of the provisions of the Standard. This will include an explanation of the requirements of the Standard, QEC 's written Hazard Communication Program, how to use the Material Safety Data Sheet, the Hazardous Chemical Inventory, and the color coded label system.

Training will be provided at the time of initial assignment and whenever a new hazardous chemical is introduced into the work area. Employees will be informed of operations in the work area where hazardous chemicals are present, and where they can find the Company's written Hazard Communication Program, the Hazardous Chemical Inventory, the hazard determination procedure, and the MSDS's.

QEC Corporate Safety will be responsible for the training of all Administrators who will in turn have the responsibility for training all supervisory personnel. The supervisor will than have primary responsibility for employee training.

10.1 INITIAL ORIENTATION AND TRAINING

New or transferred employees must be assumed to have little or no prior knowledge of the extent of the hazards associated with chemicals. Prior to initiation of work, the supervisor must give the new employee a thorough description of the work area, use and maintenance of personal protective devices, and a complete description of the initial work assignment.

The format of the hazard communication portion of the initial orientation and training includes the supervisors classroom type instruction on the employees right-to-know, how to use a Material Safety Data Sheet, and where to find the Field MSDS Binder which has copies of the MSDS's, the company's Hazard Communication Program, the OSHA Standard, and the Hazardous Chemical Inventory. A printed handout will be used to provide instruction on the OSHA Hazard Communication Standard. A second printed handout, including posters, placards, wallet cards, and signs will be used to provide instruction on the color coded HMIS labeling system.

10.2 ON-THE-JOB TRAINING

For those employees who will be working directly with a hazardous chemical, the functional supervisor in the area in which the work will take

place will be responsible for specific on-the-job training in regard to these chemicals. The supervisor will instruct these employees on the methods and observations that may be used to detect the presence or release of the hazardous chemical, including air sampling, personal monitoring, visual appearance, odor, etc., the physical and health hazard of the chemical, and the specific measures the employee can take to protect himself from these hazards.

During this on-the-job training and working directly with a hazardous chemical, it should be planned to have the new employee work closely with a more experienced co-worker until such time as it is determined the new employee can work independently.

10.3 NON-ROUTINE TASKS

All management personnel are responsible for contacting the Administrator before any non-routine task is undertaken in their respective department or anywhere else in the work place where personnel may have the potential for exposure to a hazardous chemical. This also applies to non-routine maintenance tasks. This is necessary to allow for a hazard assessment to be made and to communicate these hazards to the affected employees before the non-routine tasks are performed and personnel are subjected to exposure. The administrator should also notify the appropriate Regional Safety Manager before beginning any non-routine tasks.

10.4 TRAINING FORMS

This is one of the most important aspects of QEC "s Hazard Communication Program. It is that part of the program that assures the employees understanding of the Hazcom training. In order to properly document the Hazard Communication Training provided to our employees, the following training forms must be completed and filed in their respective locations as indicated:

a) HMIS EMPLOYEE QUIZ

The employee must be required to complete this quiz in order to insure his or her understanding of the HMIS Labeling System in use by QEC. A copy of the completed quiz should be placed in the employees personnel file for thirty year retention.

b) EMPLOYEE'S EVALUATION OF HAZCOM TRAINING

The employee must be required to complete this form in an effort to ensure his or her understanding of the Hazard Communication training he or she has received. A copy of the completed evaluation should be placed in the employees personnel file for thirty year retention.

c) HAZARD COMMUNICATION TRAINING LOG

The Hazard Communication Training Log must be signed by each employee receiving Hazard Communication training, attesting to this training and the date(s) on which it was conducted. A copy of this training log should be placed in the permanent job file for thirty year retention after the completion of the project.

d) HAZCOM TRAINING IDENTIFICATION LIST

The Hazcom Training Identification List must be completed during the course of each project to identify those groups or individual workers who may be exposed to a hazardous chemical and whether or not they received hazcom training. At the completion of the project, this list should become a part of the permanent job file for thirty year retention.

11.0 UNLABELED PIPES

11.1 OWNED OR OPERATED FACILITIES

The Administrator is responsible for ensuring that all piping systems within the work places of QEC owned or operated facilities are identified as to their contents, and recording their location, contents and hazards should they contain hazardous chemicals. This information must be entered on an inventory sheet and become a part of the Master and Field MSDS Binders.

Following this inventory, all unlabeled pipes which contain hazardous chemicals must be labeled with the appropriately marked HMIS label at intervals of no more than fifteen (15) feet so as to communicate the necessary hazard warning information to all employees and contractors working in the area where such pipes are located.

11.2 JOB SITES

The problem of unlabeled pipes on a job site presents a specific problem on renovation or demolition projects. In the event any unlabeled pipes are discovered, all work in the immediate vicinity of the pipes must be halted until such time as a determination can be made to identify the contents of the pipes. If such an assessment determines that chemicals constituting a hazard are present, the necessary hazard information must be communicated to all affected workers prior to such work being allowed to continue.

Whenever hazardous chemicals are identified with respect to either unlabeled pipes or non-routine tasks, the location of such potential hazards will be added to all appropriate chemical inventories by the designated

supervisor and/or the Administrator.

12.0 DOCUMENTATION AND FORMS

The passage of the OSHA Hazard Communication Standard has mandated that the employer provide worker training in the area of hazardous chemicals. It has been found that it is not adequate to just provide this training, but there it is necessary to have sufficient written documentation that the employee has received and understood the training. This problem is especially sensitive with unskilled and with non-English speaking workers. Even though all handouts will be printed in both English and Spanish, for those workers who do not speak English, the supervisor must use an interpreter and provide special attention during training to assure that safe work habits are developed.

It will therefore be necessary to obtain have the employee complete both the Employee's Evaluation of the Hazcom Training and the HMIS Quiz and to have the employee sign the Hazard Communications Training Log attesting to the fact that they have received hazard communication training, that they have been furnished hazard communication material, that they have studied the material, and that they comprehend the information contained in the material. The forms accompanying this program must be used.

QUALITY ENVIRONMENTAL CONTRACTORS, INC.

LEAD ABATEMENT GUIDLINES

CORPORATE SAFETY PROGRAM

REFERENCE MANUAL

LEAD ABATEMENT GUIDELINES

1.0 PURPOSE

These procedures establish uniform guidelines for providing a program to protect construction employees from excessive exposure to lead while working on a construction site.

2.0 SCOPE

This section applies to all QEC divisions engaged in lead removal operations while on a construction project.

3.0 APPLICATION

The primary application of this program is to construction operations that are performed at coal burning power plants. Application of this program is also extended to those construction areas in which lead is used in building construction, such as roofs, cornices, tank linings, electrical conduits, plumbing and lead-containing paint.

Operations within the construction industry which can generate lead exposure, include the following:

Removal of lead-containing paint.

Asbestos abatement operations in areas of high fly ash concentrations.

Flame-torch cutting, welding, and grinding of lead painted surfaces in repair, reconstruction, dismantling, and demolition work.

4.0 CODES AND REGULATIONS

General applicability of Codes and Regulations: Except to the extent that more explicit, or more stringent requirements are written directly into this program, all applicable codes and regulation have the same force and effect as if copied directly into this program.

Those standards governing the development of this program include but are not limited to the following.

29 CFR 1926.103	Respiratory Protection
29 CFR 1926.20	General Safety and Health provisions
29 CFR 1926.21	Safety Training

29 CFR 1926.28	Personal Protection Equipment
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts and Mists
29 CFR 1926.59	Hazard Communication
29 CFR 1926.354	Welding, Cutting and Heating in Way of Preservative Coatings
29 CFR 1910.1018	Inorganic Arsenic
29 CFR 1910.20	Access to Employee Exposure and Medical Records

Reference QEC Corporate Safety Programs

5.0 DESIGNATION OF ADMINISTRATOR

A program administrator shall be designated by name. This should be a competent person who will have responsibility for implementation of, and adherence to, the provisions of this program. It is usually a good idea to also designate each person who is responsible for enforcement of this program at the job site. This is usually the site superintendent or general foreman.

5.1 RESPONSIBILITY

It is the responsibility of the Project Manager to ensure that all operating areas comply with the intent of this program.

It is the responsibility of the Project Safety Coordinator to provide for the necessary training, monitoring and to ensure compliance via the use of audits and job site inspectors.

It is the responsibility of Project and Division management to provide the necessary support to the project to assist in the successful completion of this program. The Division Safety Manager, will audit as necessary to ensure compliance.

6.0 ALLOWABLE EXPOSURE LIMITS

6.1 **Permissible exposure limit (PEL):** 200 micrograms per cubic meter of air (200 µg/m), averaged over any 8 hour period (Time-Weighted Average, TWA). This is the maximum level employees may be exposed to without using respiratory protection.

7.0 EXPOSURE MONITORING

Jobs involing the use of construction materials containing lead, or where the likelihood of disturbing in-place lead paints and coatings is present, should be targeted for detailed evaluation of their potential for lead exposure.

7.1 **Bulk Sampling:** Whenever possible, attempt to obtain samples of paint and/or fly ash from the potential work zones within the customer's facility. These samples should be analyzed for Lead content and can then be used to predict the potential for exposure.

These samples should be drawn at least one week prior to the work start to allow for lab processing time. It is acceptable to discuss exposure concerns with the customer's safety/health personnel. If their analysis shows routine high concentrations of lead, overexposure should be considered a potential hazard.

When bulk sampling is not feasible, the use of additional methods, such as the Lead Stick, to determine the presence of lead will be acceptable.

7.2 **Prior Data:** If possible, QEC project management should review with the customer's safety representative any previous data obtained under the plants normal conditions. Although data taken during normal plant operations does not accurately reflect potential exposures to workers conducting construction type operations, overexposure during routine work may signal concern for any construction workers performing non-routine tasks.

7.3 **Air Sampling:** Air Sampling should be conducted initially for representative operations in order to establish an 8 hour TWA of employee exposure. Each job classification should be tested for at least 7 hours. If the results are under the PEL, monitoring can be discontinued. Additional monitoring may be required if there is a change in plant operation, process, controls or any other change that may increase the exposure to lead.

Air samples should be taken and laboratory analyzed. These samples should be taken in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7082, or equivalent, and under conditions that represent each employee's regular daily exposure to lead. Turn around time can run from a one day rush to 10 normal.

Ongoing monitoring should continue if the results are above the PEL.

At levels above the PEL, monitoring will be repeated every quarter and continue until two consecutive measurements taken 7 days apart are below the PEL.

Exposure monitoring results will enable us to:

Identify sources of exposure;

Select the appropriate respiratory device and monitor effectiveness;

Determine the effectiveness of work practice in controlling exposures;

Recognize the need for modifying exposure/control practices including the need for additional engineering controls; and

Determine the need for medical monitoring.

7.4 **Notification:** All employees involved in air monitoring should receive notification of their results within 5 days of the results arrival.

8.0 ENGINEERING AND WORK PRACTICE CONTROLS

8.1 **Burning, Cutting and Heating:** In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application. Either general mechanical or local exhaust shall be used when burning, cutting or heating any lead based metals in an enclosed space.

8.2 **Establishing Regulated Areas:** The employer shall establish regulated areas where exposures are in excess of the PEL.

8.3 **Posting Warning Signs:** OEC supervision will post signs for the appropriate hazard. When airborne lead concentrations exceed the PEL, warning signs must read:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

This warning sign shall be posted at all entry points into a regulated area.

8.4 **Restrict Access:** Caution tape will be used to restrict access as required on all OEC job sites.

8.5 **Eating Areas:** Lead can be unintentionally ingested via eating, drinking, or smoking on the job site. OEC supervision will strictly enforce the policy of no eating, drinking, smoking, chewing gum or using tobacco in regulated areas. A clean area, free from exposure to lead should be provided for employee's to use for eating lunch. Employees using the lunch area shall have access to hot and cold water, soap, and towels, and shall be required to wash their hands before eating. While drinking water is allowed

proper hygiene practices should be observed with regard to water coolers and drinking cups.

9.0 RESPIRATORS AND FIT TESTING

If exposure levels are at or above the PEL, respirators should be provided according to the following table. All respirators must be NIOSH approved. In each case the minimum requirement is shown.

LEAD	RESPIRATOR TYPE
50 to 499 $\mu g/m^3$	Half-face piece. HEPA filters
500 to 2499 $\mu g/m^3$	Full facepiece, HEPA filters
2500 to 49,999 $\mu g/m^3$	Powered-air purifying respirator with HEPA filters
50,000 to 99,999 $\mu g/m^3$	Positive pressure, supplied-air, full face-piece, hood or helmet
100,000 $\mu g/m^3$ and up	Full facepiece SCBA

9.1 **Respirator Protection Program:** For information on QEC's Respirator Protection Program, including selection, fit testing, cleaning and maintenance, etc., refer to Section 7.1 of QEC's Corporate Safety Program.

9.2 **Changing Cartridges:** Filters will be changed when there is an increase in breathing resistance. On-hand stock of filters shall be maintained to permit replacement.

9.3 **PERSONAL HYGIENE:** Employees shall be permitted to wash their face and respirator seal to prevent skin irritation often associated with respirator use. This activity is required at breaks and lunch as a good hygiene practice.

10.0 PERSONAL PROTECTION EQUIPMENT

10.1 **Personal Protection Equipment:** Employee's working in regulated areas will be provided disposable coveralls. Disposable clothing will be disposed of in accordance with local, state and federal regulations. If non-disposable clothing is issued, it will have to be bagged, marked, and laundered in accordance with the required regulations. Other protective equipment includes but may not be limited to:

Hard Hat	Hearing Protection
Disposable Clothing	Steel Toed Shoes
Face Shield	Overboots
Fall Protection Equipment	Safety Glasses
Gloves	Safety Goggles

11.0 HYGIENE FACILITIES

If the exposure levels of lead are at or above the PEL, employees working in those areas should be provided with the following:

Clean change room with storage for street clothes and separate storage for protective equipment.

Showers will be provided and must be used by all employees at the end of each shift worked in a regulated area. Note: The company will provide body soap and clean towels.

Lunchrooms, separate of the work site, should be provided. It is the employee's responsibility to wash their hands and face prior to eating. Washing facilities/arrangements shall be provided.

Break Decon: The company will provide and the employees will use a HEPA vacuum to vac work clothing and boots prior to entering change rooms or lunch-rooms.

12.0 HOUSEKEEPING

General housekeeping is an important part of limiting employee exposure. Every effort shall be made to limit the build up of dust on surfaces or floors in our facilities. It is preferred that wet cleaning or vacuuming be used to clean dust to avoid sweeping.

13.0 MEDICAL EXAMINATIONS

In the event that exposure monitoring should determine that a medical surveillance program is required, refer to the appropriate appendix within this section for detailed information concerning medical examinations:

Lead - Appendix A

14.0 TRAINING

All employees who have the potential for exposure to lead should be provided with Safety Training prior to their initial job assignment and at least annually.

Safety Training should include the following:

The content of the applicable standards and

The content of the applicable standards and appropriate appendices.

The specific nature of operations which could result in exposures over the action level.

The purpose, selection, fitting, use and limitations of respirators.

The purpose and description of the applicable medical surveillance program.

Engineering controls and work practices.

SECTION C. LOUISIANA CONTRACTORS LICENSE

1. ASBESTOS SPECIALITY ENDORSEMENT

INCLUDED IN CONTRACTOR LICENSE

State of Louisiana

State Licensing Board for Contractors

This is to Certify that: QUALITY ENVIRONMENTAL CONTRACTORS, INC.

113 Ondine Lane
Slidell LA 70458

is duly licensed and entitled to practice the following classifications:

BUILDING CONSTRUCTION; SPECIALTY: ASBESTOS REMOVAL AND ABATEMENT; SPECIALTY: LEAD BASED PAINT ABATEMENT AND REMOVAL

STATE OF LOUISIANA UNION JUSTICE CONFIDENCE

until December 31, 1996, when this Certificate expires.
Witness our hand and seal of the Board dated,
Baton Rouge, La. 1ST day of JANUARY 1996.

J. E. Lamonica, Jr.
DIRECTOR

Donald G. Lambert
CHAIRMAN

A. Wayne Sowell
SECRETARY-TREASURER

No. 26445

This License Is Not Transferable

2. SAMPLE CERTIFICATE OF INSURANCE

ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY) 08/13/96

PRODUCER

Thorer Special Risk, Inc.
P. O. Box 40143
10566 Airline Highway
Baton Rouge, LA 70835

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

Quality Environmental Contr.
113 Ondine Lane

Slidell, LA 70458

COMPANIES AFFORDING COVERAGE

COMPANY A: STEADFAST INSURANCE COMPANY

COMPANY B: LOUISIANA WORKERS COMP. CORP.

COMPANY C:

COMPANY D:

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS MADE [X] OCCUR OWNER'S & CONTRACTOR'S PROT [X] ASBESTOS LIABILITY	AA03652374-00	02/01/96	02/01/97	GENERAL AGGREGATE PRODUCTS - COMP/OP AGG PERSONAL & ADV INJURY EACH OCCURRENCE FIRE DAMAGE (Any one fire) MED EXP (Any one person)	$1,000,000 $1,000,000 $1,000,000 $1,000,000 $50,000 $5,000
	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS [ ]				COMBINED SINGLE LIMIT BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE	$ $ $ $
	GARAGE LIABILITY [ ] ANY AUTO [ ]				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EACH ACCIDENT AGGREGATE	$ $ $
	EXCESS LIABILITY [ ] UMBRELLA FORM OTHER THAN UMBRELLA FORM				EACH OCCURRENCE AGGREGATE 	$ $ $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: [ ] INCL [X] EXCL	3548	12/16/95	**	[X] WC STATU-TORY LIMITS [ ] OTH-ER EL EACH ACCIDENT EL DISEASE - POLICY LIMIT EL DISEASE - EA EMPLOYEE	 $1,000,000 $1,000,000 $1,000,000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

ADDITIONAL INSUREDS AND WAIVERS OF SUBROGATION AS REQUIRED BY WRITTEN CONTRACT. **WORKERS COMP. CONTINUOUS UNTIL CANCELLED.

CERTIFICATE HOLDER

SAMPLE

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE Richard S. Thorer

3. EXPERIENCE MODIFIER RATE

RSR
RHORER SPECIAL RISKS, INC.
International Insurance Brokers

Facsimile Transmittal Form

To: Tony Incardona

Company: Quality Environmental Contr.

Number of Pages (Including This Page): 1

RE: Louisiana Workers Compensation Corporation
Policy # 3548

From: Karen Masoner

Date: June 15, 1995

Recipients Fax Number: auto dial

Text

Dear Tony,

Per your request I have checked with the LWCC and confirmed that your experience modifiers for the past three years are as follows:

1993/1994	1.00
1994/1995	1.00
1995/1996	1.00

Also, I have confirmed that you receive an Compedge Customer Performance Incentive discount due your successful loss prevention and safety efforts.

Sincerely,

Karen Masoner

Karen Masoner
Rhorer Special Risks, Inc.

Post Office Box 40143 • Baton Rouge, Louisiana 70835 U.S.A. • (504) 291-3393 • (504) 291-3396 – FAX

SECTION D. REFERENCE LIST

REFERENCE LIST QUALITY ENVIRONMENTAL

CLIENT	LOCATION	CONTACT	CONTRACT AMOUNT
GOTTFRIED CORPORATION	U.S.D.A NEW ORLEANS, LA.	HARRY SOIHJOO (504) 286-4412	$480,000.00
STATE OF LOUISIANA	McNEESE UNIV. LAKE CHARLES, LA.	RICHARD RHODEN (318) 475-5886	$102,692.00
NEW ORLEANS AIRPORT	CONCOURSE "C" KENNER, LA.	SANDY CONROY (504) 464-9155	$232,000.00
A.A.I. VENTURES	RIVERGATE CASINO NEW ORLEANS, LA.	WARREN BROWN (504) 737-9063	$261,000.00
A.A.I. VENTURES	TEMPORARY CASINO NEW ORLEANS, LA.	WARREN BROWN (504) 737-9063	$265,000.00
NSC CORPORATION	MOBILE BUILDING NEW ORLEANS, LA.	FRANK FRADELLA (508) 686-6417	$502,803.00
NSC CORPORATION	NEW ORLEANS AIRPORT (DELTA)	FRANK FRADELLA (508) 686-6417	$152,500.00
TRANSWESTERN PROPERTY CO.	ONE SHELL SQ. NEW ORLEANS, LA.	RUSSELL MARCHANT (504) 581-7012	$326,525.00
ST. TAMMANY SCHOOL BOARD	VARIOUS SCHOOLS SLIDELL, LA.	JULES LEGARDE (504) 646-4900	$77,250.00
MONTELEONE CORPORATION	MONTELEONE HOTEL	WAYNE MOREE (504) 523-3341	$425,000.00
4140 CANAL INC.	4140 CANAL ST. NEW ORLEANS, LA.	BARRY KATZ (504) 488-2435	$52,000.00
WINTER ENVIR. CORP.	NEW ORLEANS AIRPORT (FIS AREA)	LARRY LINDMAN (313) 645-0582	$199,000.00
COPELAND'S OF NEW ORLEANS	STRAYA'S #2	MATTHEW AHEARN (504) 830-1000	$75,000.00
MARINITTES OF HOLY CROSS	HOLY CROSS COLLEGE	SR. ROSE ELIZABETH (504) 394-5792	$32,000.00
MARINETTS OF HOLY CROSS	HOLY ANGELS SCHOOL	SR. MARGORIE HEBER (504) 945-1620	$52,000.00
TRANSAMERICAN REFINERY	WEST PLANT NORCO, LA.	SCOTT ALLEN (504) 764-8611	$125,000.00
FED. RESERVE BANK	ST. CHARLES AVE. NEW ORLEANS, LA.	DENISE JEFFERSON (504) 593-3255	$10,500.00
LADDER & BLUM	925 COMMON ST. NEW ORLEANS, LA.	RICK LOTZ (504) 558-0494	$58,000.00

APPENDIX C

ACM SUBCONTRACTOR #2 WORK PLAN

APPENDIX D

ACM SUBCONTRACTOR #3 WORK PLAN

APPENDIX E

RESTORATION SUBCONTRACTOR WORK PLAN

NOLA CONSTRUCTION, CO., INC.

4101 Wilson, Avenue
New Orleans, LA 70126

PLAN OF ACTION

(USACE) CONTRACT No. DACW45-94-D-0054

Westbank Asbestos Removal Project New Orleans
Rehabilitate Asbestos Removal sites

Upon receipt of Work Orders, a "Work Order Survey" will be conducted by the Project Superintendent assigned to the Project to determine the access at each site and the type and size of equipment that can be best utilized at the different sites. When this has been accomplished, we will then be able to determine the size of the crew that will best suit each area and each work order. In some cases there will possibly be the need for split crews, that is, we would allow manpower to remain at a minor site to spread and compact with hand equipment while the placement crew would handle the larger sites of the "Work Order" that require the use of machinery to spread and compact. The dump truck would then be free to haul material to each site or to move equipment from site to site as each situation dictates.

There will be cases when an additional dump truck or additional personnel will have to be utilized in order to service all the sites. This will be handled on an "as needed basis," which will be determined by the "Work Order Survey."

Unless a site is secured, such as a secured fenced playground we intend to remove our equipment on a daily basis in order to limit the possibility of accidents, or in some cases, vandalism.

At the completion of each area our Project Superintendent will inspect and verify grades at which time he will notify **"IT's"** Project manager that the site or sites are ready for inspection. Upon acceptance by **"IT's"** Project Manager, he will sign **NOLA's** standard acceptance form and the site will then be turned over to **"IT."**

PLAN OF ACTION

The crew and equipment anticipated in most cases for this project is as follows

1- Tandem (12 CY) Dump truck

1- Equipment Trailer

1- Backhoe or Bobcat (determined by site size or conditions)

1- Personnel/Tool Truck

1- Walk behind power driven vibratory roller

1- Whacker Packer

3- Laborers

1- Operator/Crew Foreman

1- Truck Driver

Area's that will require top soil and sod will be Subcontracted to a Landscaping contractor that will be acceptable to "IT".

Respectfully Submitted,

Carl Scarkino, Jr.

Carl Scarkino, Jr.

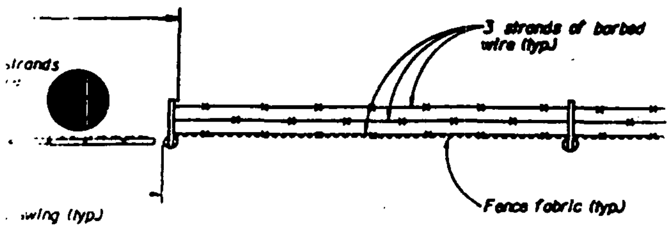
Project Coordinator

APPENDIX F

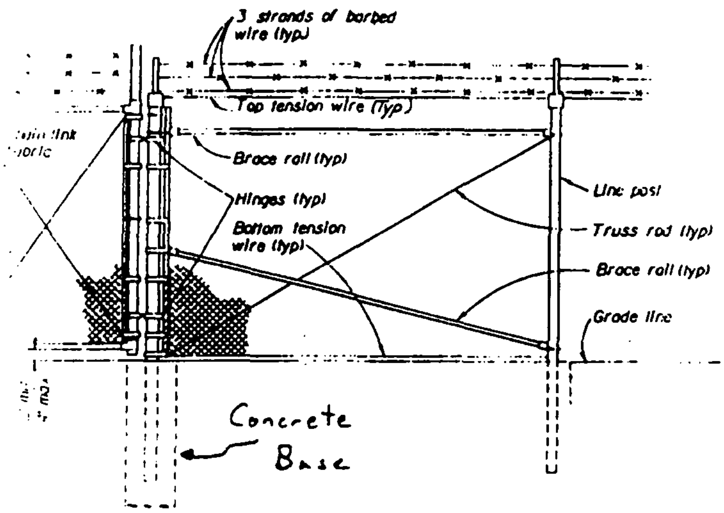
FENCE AND GATE SPECIFICATIONS

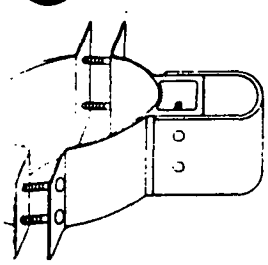
3 | 2 | 1

1A



barbed



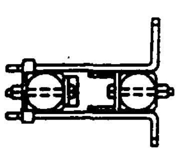


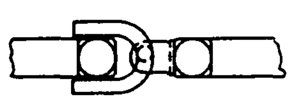
STANDARD HINGE

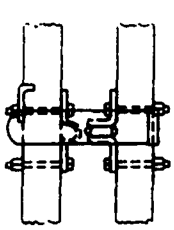
GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
More than 6' to 13'	4.0" OD
More than 13' to 18'	6.625" OD
More than 18'	8.625" OD

NOTES:
1. Details shown are to clarify requirements and are not intended to limit other type of fence sections and methods of installation.
2. Swing Gates shall be constructed with drop rods, padlocks, latch assembly and gate keepers except as noted.
3. All gate frames shall be a minimum 1.90" nominal (round) or 2.00" nominal (square). Gate frames shall be of welded construction or shall be assembled using heavy fittings. At Contractor's option a welded horizontal brace may be used in lieu of truss rods to brace all welded gate frames. The Contractor shall be responsible for the proper rigid construction of all gates supplied.
4. Gates shall be designated as follows:
   - Fence Type - FE5, FE6, etc.
   - Fence Height - Inches
   - Type Opening - SO (single)
     - DO (double)
   - Hinge - RA (standard)
     - HO (offset)
   - Opening - Feet (clear opening between gate posts)
   - EXAMPLES: FE6-84-DO-RA-12

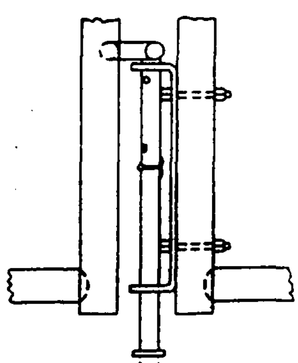
5. Concrete Base at gate posts.







LATCH ASSEMBLY



DROP ROD ASSEMBLY

GATE DETAILS
NO SCALE

$$ - THINK VALUE ENGINEERING - $$

Symbol	Descriptions	Date	Approved

Designed by: R.G.P.
Drawn by: A.S.GOETSCH
Checked by: R.G.P.
Reviewed by:
Submitted by:
Chief, Civil Engr. Section

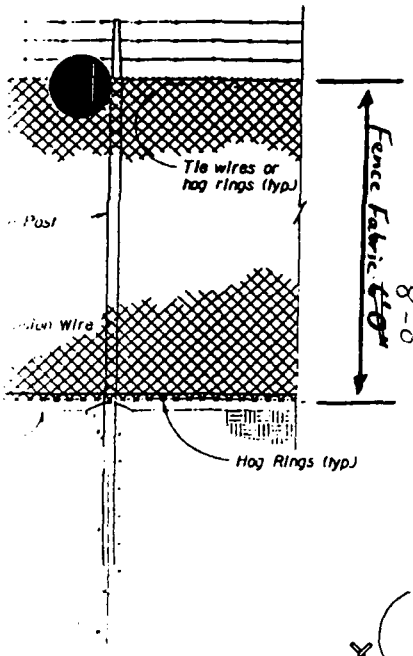
OFFUTT A.F.B. - OMAHA, NEBRASKA
MILSTAR GROUND COMMUNICATIONS TERMINAL

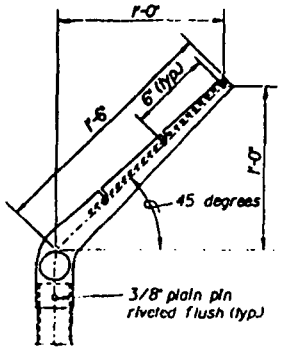
Scale: As Shown
Date: JUNE 1992
Spec. No.: DACA 45-92-B-0075
Contract No.:
C-17
Drawing Code: AF 713-10-01

THIS DRAWING HAS BEEN REDUCED TO ONE-HALF THE ORIGINAL SCALE

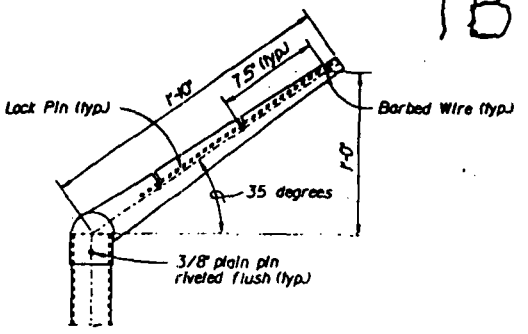
3 | 2

1B





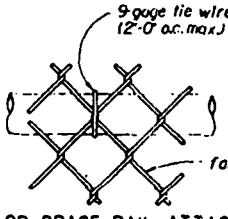
LINE POST



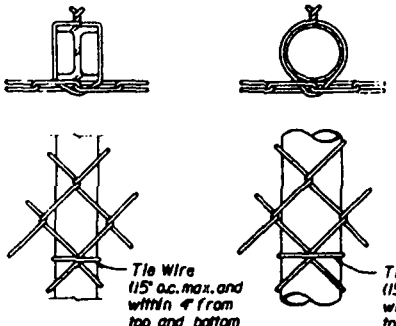
CORNER POST

EXTENSION ARM DETAILS
NO SCALE

STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC LESS THAN 72"	FABRIC 72" TO 96"	FABRIC OVER 96"
Corner, End & Pull Posts			
Tubular - Round		2.875" O.D.	
Tubular - Square		2.50" SQ.	
C-Section (Roll-Formed)		3.50" x 3.50"	
Line Posts			
Tubular - Round		2.375" O.D.	
H-Section		2.25" x 1.70"	
C-Section (Roll-Formed)		2.25" x 1.70"	
Top, Bottom & Brace Rails			
Tubular - Round	1.66" O.D.		
Tubular - Square	1.50" O.D.		
H-Section	1.625" x 1.50"		
C-Section (Roll-Formed)	1.625" x 1.25"		



TOP OR BRACE RAIL ATTACHMENT



H-BEAM ROUND POST

LINE POST ATTACHMENTS

NOTES:
1. Details shown are to clarify requirements and are not intended to limit other types of fence sections and methods of installation.
2. Wire ties, rails, posts, and braces shall be constructed on the secure side of the fence alignment. Chain-link fabric shall be placed on the opposite side of the secure area.
3. Unless specifically shown or specified, all FE6 fence shall have apron extended outward from the area being protected.
4. C-section posts shall be installed so that the void inside the post is completely filled with concrete up to the top of the foundation.

FENCE LEGEND:

TWBR - Fence with top tension wire and bottom rail. Final number is fabric width in inches.

5. Concrete Base at all corner, end, or pull posts.
6. Line posts shall be driven

$$ - THINK VALUE ENGINEERING - $$

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

Designed by: R.G.P.
Drawn by: D.J.K.
Checked by: R.G.P.
Reviewed by:
Submitted by: Chief, Civil Engr. Section

OFFUTT A.F.B. OMAHA, NEBRASKA
MILSTAR GROUND COMMUNICATIONS TERMINAL

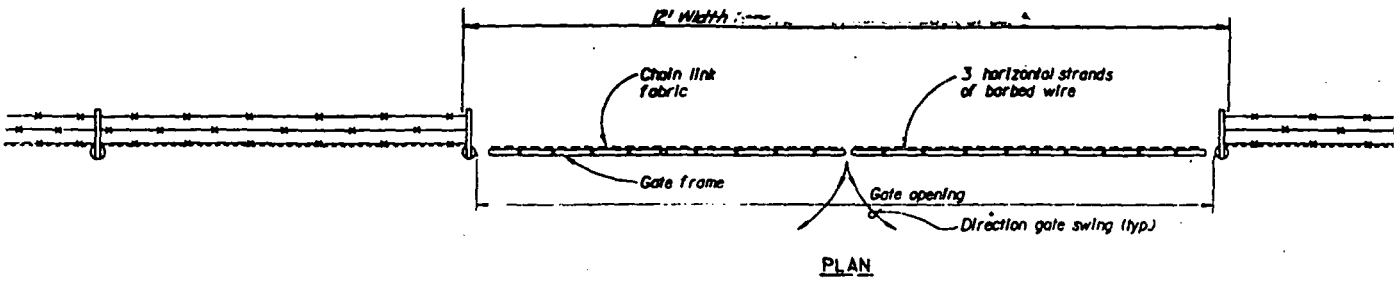
FE6 CHAIN-LINK SECURITY FENCE DETAILS

Scale: As Shown
Plot Scale Ratio: 1:1
Design File: CML-FENCE
Date: JUNE 1992
Spec. No.: DACA 45 92-B-0079
Contract No.:
Sheet reference number: C-16
Drawing Code: AF 713-10-01

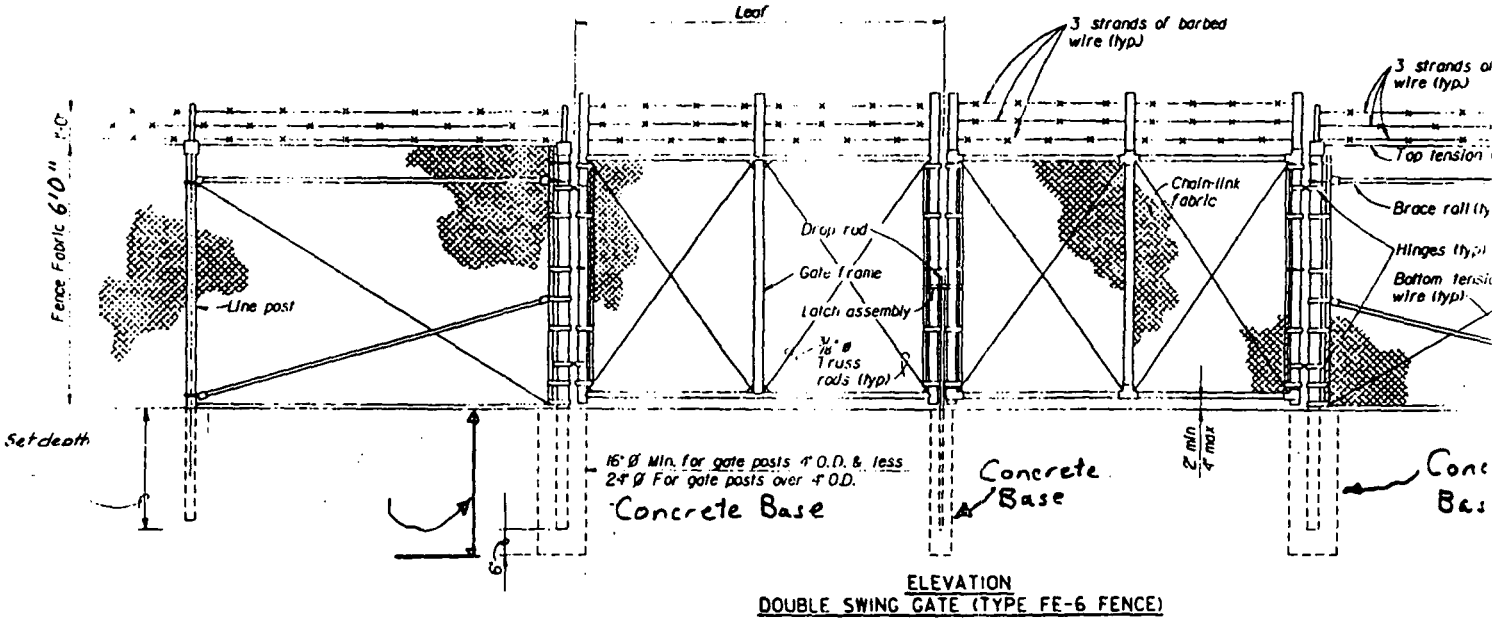
COMPUTER AIDED DESIGN & DRAFTING

THIS DRAWING HAS BEEN REDUCED TO ONE-HALF THE ORIGINAL SCALE

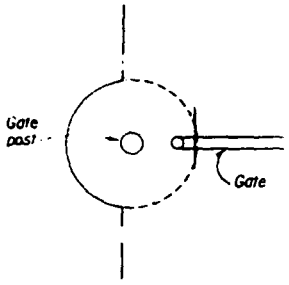
2A



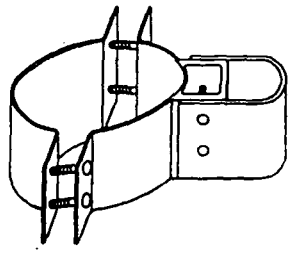
PLAN



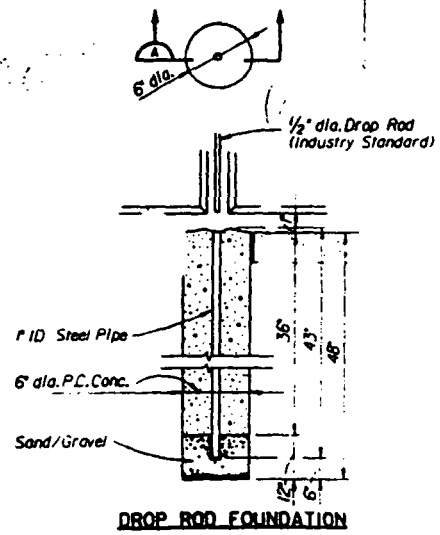
ELEVATION
DOUBLE SWING GATE (TYPE FE-6 FENCE)



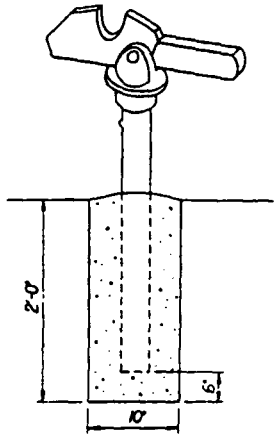
PLAN



STANDARD HINGE



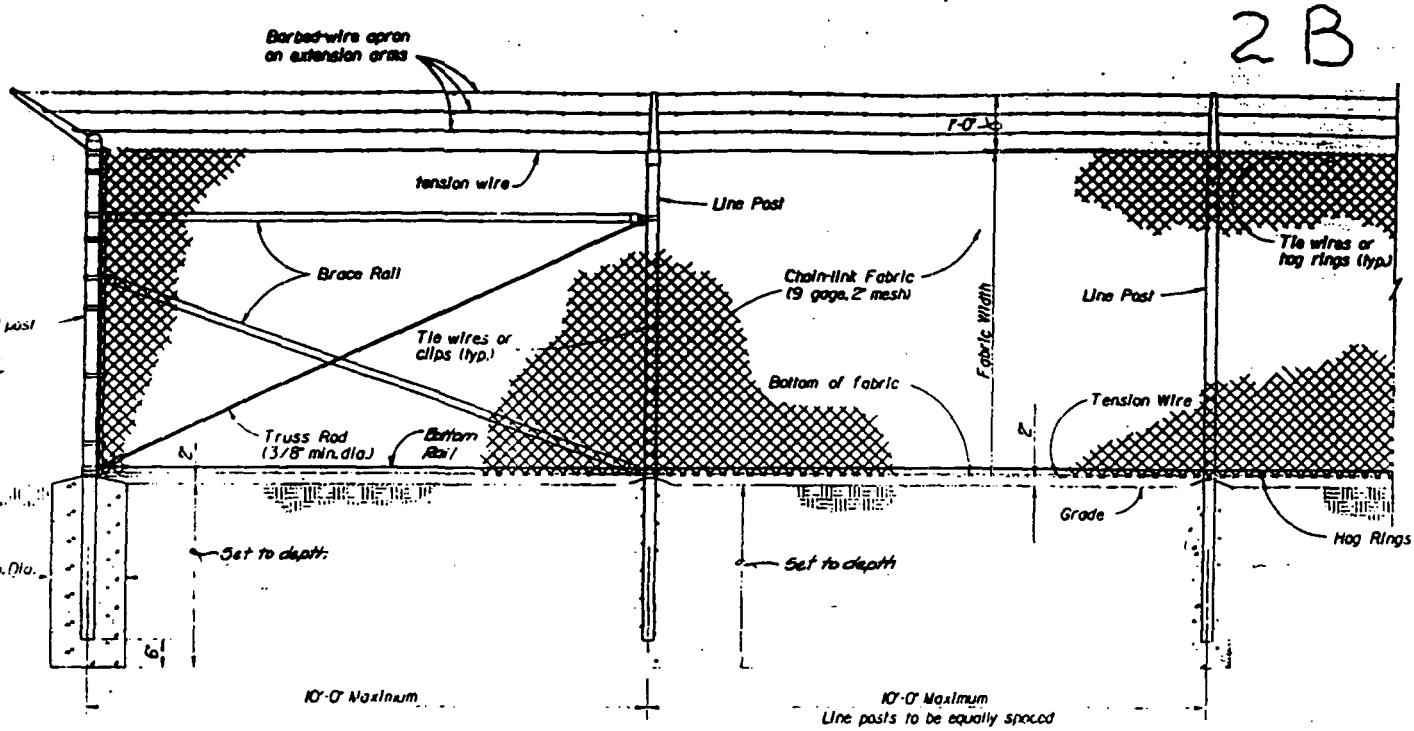
DROP ROD FOUNDATION



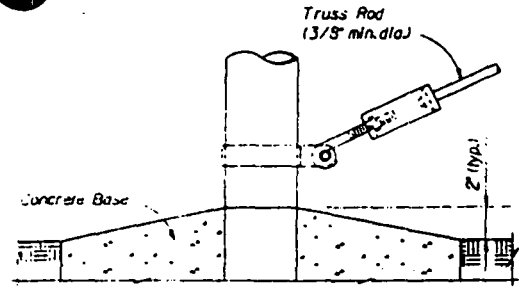
GATE KEEPER
(TO HOLD GATE OPEN)

SWING GATE DETAILS
NO SCALE

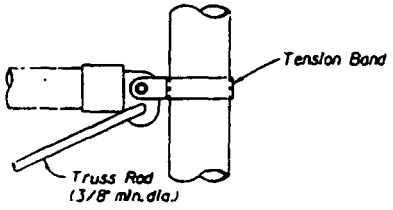
2B



CHAIN-LINK SECURITY FENCE DETAIL
NO SCALE



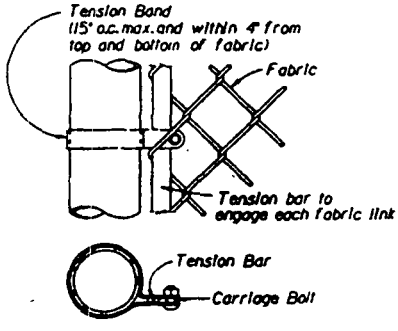
TRUSS ROD AND BAND



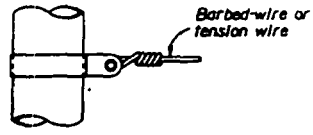
ROUND POST

H-BEAM

BRACE RAIL CLAMP DETAILS

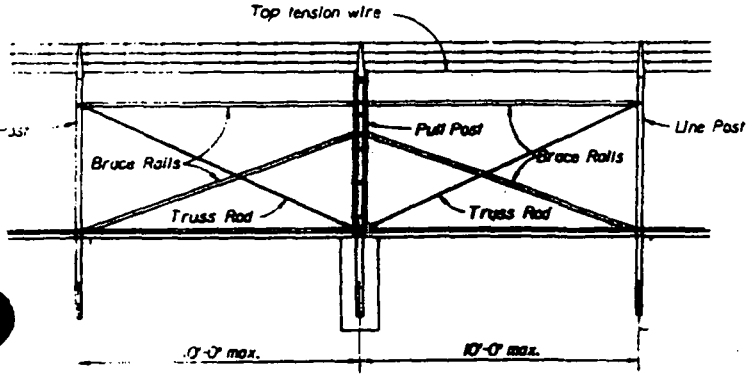


END OR GATE POST DETAIL



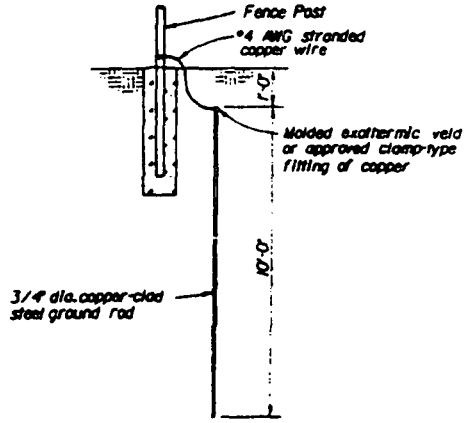
TENSION BAND DETAIL

FASTENING DETAILS
NO SCALE



BRACE PANEL DETAIL
NO SCALE

NOTE:
Provide brace panel whenever straight runs exceed 500 feet.



GROUNDING DETAIL
NO SCALE

TOP OR

H-BE

APPENDIX G

PROJECT FORMS

INTERNATIONAL TECHNOLOGY CORPORATION

WESTBANK ASBESTOS ABATEMENT PROJECT
NEW ORLEANS, LOUISIANA

DAILY ACM REMOVAL SITE QA REPORT

DATE: _____ SITE NUMBER _____

SUBCONRACTOR: _____

START TIME: _____

END TIME: _____ SITE ADDRESS:

WEATHER CONDITIONS: _____ _____

_____

TAILGATE SALARY FORM: Y or N (Attach) _____

Crew: _____

Equip: _____

SQUARE YARDS ACM REMOVED: _____ WAS SITE VACUUMED?
Y or N (Circle)

CUBIC YARDS ACM REMOVED: _____ FOREMAN: _____

DATE OF CONFIRMATION SAMPLING: _____ Hours Worked: _____

PRE-REMOVAL PHOTOS TAKEN? Y or N

CORRESPONDING ADVF #: _____ Tons: _____

IS SITE READY FOR RESTORATION? Y or N (Circle)

PERSONNEL AIR MONITORING SAMPLES:

Sample No.: _____ Personnel Name: _____

NOTES/COMMENTS: (Continue on Reverse Side if Necessary)

1) General Outline of Removal Procedure for Day:

_____

2) General Outline of Disposal Procedure for Day:

_____

3) H & S Problems?

_____

4) Deviation from Subcontractor Work Plan:

_____

5) Visitors:

_____

INTERNATIONAL TECHNOLOGY CORPORATION

WESTBANK ASBESTOS ABATEMENT PROJECT
NEW ORLEANS, LOUISIANA

DAILY RESTORATION QA REPORT

DATE: _____ SITE NUMBER _____

RESTORATION SUB: START TIME: _____
END TIME: _____

_____

SITE ADDRESS:
_____
_____
_____
_____
_____

TAILGATE SALARY FORM: Y or N (Attach)
Crew:
Equip:
Foreman:_____ Hrs Worked_____

QUANTITIES:

Driveways:

Area Restored _____ S.Y.
Volume of Material Placed _____ C.Y.
Landscape Edging _____ L.F.

Backfill:

Area Restored_____ S.Y.
Volume of Topsoil Placed _____ C.Y.

Walkways:

Area Restored _____ S.Y.
Volume of Material Placed _____ C.Y.
Landscape Edging _____ L.F.

Sod:

Sod Placed _____ S.Y.

NOTES/COMMENTS: (Continue on Reverse Side if Necessary)

1) General Outline of Restoration Procedure for Day:

_____

2) H & S Problems:

_____

3) Deviation from Work Plan:

_____

4) Visitors:

_____

POST PHOTOS TAKEN AND LOGGED: Y or N (Circle)

IS RESTORATION COMPLETE? Y or N (Circle)

INTERNATIONAL TECHNOLOGY CORPORATION

WESTBANK ASBESTOS ABATEMENT PROJECT
NEW ORLEANS, LOUISIANA

REMOVAL EVALUATION REPORT & DATA SUMMARY

SUBCONTRACTOR:

_____

ACCESS FORM: _____DATE REC'D._____

START DATE: _____

END DATE: _____

PRE-REMOVAL PHOTOS: Y or N

DATE: _____

POST REMOVAL PHOTOS: Y or N

DATE: _____

UTILITIES LOCATED: Y or N

DATE: _____

SITE NUMBER _____

OWNER NAME:

_____

SITE ADDRESS:

_____

_____

_____

_____

TOTAL SQUARE YARDS ACM REMOVED: _____

TOTAL CUBIC YARDS ACM REMOVED: _____

PERSONNEL AIR MONITORING SAMPLES: Y or N RESULTS: _____

DATE RECEIVED COMPLETED ADVF: _____ (Tons) _____

FOREMAN:_____ TOTAL HOURS:_____

RATE PERFORMANCE: Circle #1 through #5 (#5 is the top rating)

HEALTH & SAFETY PRACTICES 1 2 3 4 5

WERE SITES COMPLETED IN A TIMELY MANNER? 1 2 3 4 5

CREW/RESIDENTS INTERFACING: 1 2 3 4 5

EXCLUSION ZONE MAINTENANCE: 1 2 3 4 5

OVERALL RATING: 1 2 3 4 5

NOTES/COMMENTS: (Continue on Reverse Side if Necessary)

_____

_____

_____

_____

IT CORP./QA REP.	USACE/OSR	SUBCONTRACTOR'S REP
_____ / /	_____ / /	_____ / /

INTERNATIONAL TECHNOLOGY CORPORATION

WESTBANK ASBESTOS ABATEMENT PROJECT
NEW ORLEANS, LOUISIANA

RESTORATION EVALUATION REPORT AND DATA SUMMARY

SUBCONTRACTOR:
_____

SITE NUMBER _____
OWNER NAME:
_____

START DATE:_____
ENDING DATE:_____
POST RESTORATION PHOTOS: Y or N
DATE:_____

SITE ADDRESS:
_____
_____
_____

QUANTITIES: (TOTALS)

Driveways:
Totals:
Area restored _____S.Y.
Volume of Material Placed _____C.Y.
Landscape Edging _____ L.F.

Backfill:
Totals:
Total Area Restored: _____S.Y.
Volume of Topsoil Placed _____ C.Y.

Walkways:
Area Restored _____ S.Y.
Volume of Material Placed _____ C.Y.
Landscape Edging _____ L.F.

Sod:
Sod Placed _____S.Y.

Foreman:_____Total Hours ____

RATE PERFORMANCE: Circle #1 through #5 (#5 is the top rating)
HEALTH & SAFETY PRACTICES 1 2 3 4 5
WERE SITES COMPLETED IN A TIMELY MANNER? 1 2 3 4 5
CREW/RESIDENTS INTERFACING: 1 2 3 4 5

OVERALL RATING: 1 2 3 4 5

NOTES/COMMENTS: (Continue on Reverse Side if Necessary)
_____
_____
_____
_____

IT CORP./QA REP. _____ / /

USACE/OSR _____ / /

SUBCONTRACTOR'S REP _____ / /

HOMEOWNER: _____

RAPID RESPONSE DAILY WORK ORDER

_____

(PRIMARY CONTRACTOR'S NAME)

_____

(CONTRACT NUMBER)

_____

(SITE NAME AND LOCATION)

REPORT NO.____ DELIVERY ORDER NO._____ DATE_____

SUBCONTRACTOR(S):

_____

_____

_____

GOVERNMENT AGENCIES ON-SCENE:

_____

_____

_____

INSTRUCTIONS: THE CONTRACTOR SHALL BE ATTACHED TO THE RAPID RESPONSE QUALITY CONTROL DAILY REPORT AND SHALL BE SUBMITTED DAILY AT THE CLOSE OF BUSINESS TO THE ON-SITE CORPS REPRESENTATIVE. CONCURRENTLY, THE CONTRACTOR SHALL PROVIDE ELECTRONIC ACCESS TO THE COMPLETED FORMS TO THE CORPS DISTRICT OFFICE AND THE AREA OFFICE.

1. DESCRIPTION OF WORK TO BE PERFORMED BY CONTRACTOR(S), WITH AN ESTIMATE OF THE PERCENTAGE TO BE COMPLETED:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

2. NUMBER OF PERSONNEL AUTHORIZED TO PERFORM WORK ON-SITE AND OFF-SITE.

SUPERVISORS	_____	FOREMAN	_____
ENGINEERS	_____	CHEMIST	_____
GEOLOGIST	_____	SAFETY	_____
EMT	_____	TECHS	_____
LABORERS	_____	OPERATORS	_____

OTHERS (SPECIFY):

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. EQUIPMENT AND EXPENDABLE MATERIALS AUTHORIZED:

ITEM	QUANTITY	DURATION	ITEM	QUANTITY	DURATION

4. TEST AND/OR INSPECTIONS TO BE PERFORMED (INDICATE TYPE AND LOCATION): _____

5. ADDITIONAL COMMENTS/REMARKS: _____

6. CERTIFICATION: I CERTIFY THAT THE ABOVE WORK IS ORDERED AND AUTHORIZED BY THE ON-SITE CORPS REPRESENTATIVE IN THE PERFORMANCE OF THE ABOVE CITED CONTRACT.

_____
ON-SITE CORPS REPRESENTATIVE

7. I ACKNOWLEDGE RECEIPT OF THIS WORK ORDER AND UNDERSTAND THAT ANY MODIFICATION TO THE WORK ORDER MUST BE IN WRITING AND APPROVED BY THE PROJECT MANAGER.

_____
CONTRACTOR'S REPRESENTATIVE

8. WORK ORDER AMENDMENTS AND MODIFICATIONS (INCLUDE TIME, DESCRIPTION, AND AUTHORIZING PERSON): _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ON-SITE CORPS REPRESENTATIVE

CONTRACTOR'S REPRESENTATIVE

RAPID RESPONSE QUALITY CONTROL DAILY REPORT

_____

(CONTRACTOR'S NAME)

_____

(CONTRACT NUMBER)

_____

(SITE NAME AND LOCATION)

REPORT NO.____ DELIVERY ORDER NO._____ DATE_____
WEATHER_____ RAINFALL_____INCHES TEMP: MIN._____ MAX._____

INSTRUCTIONS: THE CONTRACTOR SHALL SUBMIT THIS FORM DAILY AT THE CLOSE OF BUSINESS TO THE ON-SITE CORPS REPRESENTATIVE. CONCURRENTLY, THE CONTRACTOR SHALL PROVIDE ELECTRONIC ACCESS TO THE COMPLETED FORMS TO THE CORPS DISTRICT OFFICE AND THE AREA OFFICE.

1. WORK PERFORMED TODAY BY PRIMARY CONTRACTOR ON-SITE AND/OR OFF-SITE (INCLUDING A COMPLETE DESCRIPTION):_____

2. WORK PERFORMED BY SUBCONTRACTORS ON-SITE AND/OR OFF-SITE (INCLUDE A COMPLETE DESCRIPTION):_____

3. COMPLETE AND ATTACH THE DAILY PERSONNEL COST REPORT AT THE END OF THIS DOCUMENT AND LABEL AS APPENDIX 1.

THE DAILY PERSONNEL COST REPORT IS REQUIRED FOR ALL COST REIMBURSABLE WORK ON-SITE AND OFF-SITE INCLUDING SUBCONTRACTORS. AT A MINIMUM, THE COST REPORT SHALL PROVIDE: REPORT TITLE, SITE NAME, CONTRACTOR, CONTRACT NUMBER, DELIVERY ORDER NUMBER, DATE, EMPLOYEE NAME AND CLASSIFICATION, HOURLY LABOR RATES (REGULAR, OVERTIME OR OTHER), TOTAL HOURS (REGULAR, OVERTIME OR OTHER) AND PER DIEM. LABOR COSTS SHALL BE SUMMED FOR: EACH EMPLOYEE, THE ENTIRE DAILY REPORT, THE ENTIRE DELIVERY ORDER (UP TO THE DATE OF THE REPORT) AND THE PERCENTAGE OF THE ESTIMATED COST OF LABOR.

4. ON-SITE CONDITIONS WHICH RESULTED IN DELAYED PROGRESS:_____

5. TYPE AND RESULTS ON INSPECTIONS: (INDICATE WHETHER: P-PREPARATORY, I-INITIAL, OR F-FOLLOWUP AND INCLUDE SATISFACTORY WORK COMPLETED OR DEFICIENCIES WITH ACTION TO BE TAKEN):

6. LIST TYPE AND LOCATION OF TESTS PERFORMED AND RESULTS:

7. LIST VERBAL INSTRUCTIONS RECEIVED FROM GOVERNMENT PERSONNEL ON ANY DEFICIENCIES OR RETESTING REQUIRED:

8. COMPLETE AND ATTACH THE DAILY EQUIPMENT COST REPORT AT THE END OF THIS DOCUMENT AND LABEL AS APPENDIX 2. THE DAILY EQUIPMENT COST REPORT IS REQUIRED FOR ALL COST REIMBURSABLE WORK ON-SITE AND OFF-SITE INCLUDING SUBCONTRACTORS. AT A MINIMUM, THE COST REPORT SHALL PROVIDE: REPORT TITLE, SITE NAME, CONTRACTOR, CONTRACT NUMBER, DELIVERY ORDER NUMBER, DATE, EQUIPMENT TYPE AND IDENTIFICATION NUMBER, HOURS IN SERVICE, HOURS STANDBY, HOURS IDLE TIME, COST RATE, AND DAYS IN SERVICE. EQUIPMENT COSTS SHALL BE SUMMED FOR: EACH TYPE, THE ENTIRE DAILY EFFORT, THE ENTIRE DELIVERY ORDER (UP TO THE DATE OF THE REPORT) AND THE PERCENTAGE OF THE ESTIMATED COST OF EQUIPMENT.

9. LIST THE TOTAL NUMBER OF SAMPLES COLLECTED AND TESTED FOR THE DAY:
COLLECTED:_____ TESTED:_____ AMPLIFYING INFO._____
_____
_____
_____
_____
_____

10. LIST THE TOTAL QUANTITY OF WASTEWATER TREATED: _____ GALLON(S)

11. LIST THE TOTAL NUMBER OF DRUMS OVERPACKED:

QUANTITY	LOCATION	HAZ-CAT
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12. LIST THE TOTAL AMOUNT OF WASTE(S) REMOVED FROM THE SITE:

LIQUID: _____BBL/GAL SOLIDS: _____YDS/TONS

AMPLIFYING INFO:_____
_____
_____
_____

13. LIST THE FOLLOWING TRANSPORTATION AND/OR DISPOSAL INFORMATION:

QUANTITY	I.D. NO.	MATERIAL	MANIFEST NO.	DISPOSAL LOCATION

14. COMPLETE AND ATTACH THE DAILY MATERIAL COST REPORT AT THE END OF THIS DOCUMENT AND LABEL AS APPENDIX 3. THE DAILY MATERIAL COST REPORT IS REQUIRED FOR ALL COST REIMBURSABLE WORK ON-SITE AND OFF-SITE INCLUDING SUBCONTRACTORS. AT A MINIMUM, THE COST REPORT SHALL PROVIDE: REPORT TITLE, SITE NAME, CONTRACTOR, CONTRACT NUMBER, DELIVERY ORDER NUMBER, DATE, MATERIAL PURCHASED, QUANTITY AND UNITS, LOCATION OF MATERIAL, AND VENDOR. MATERIAL COSTS SHALL BE SUMMED FOR: EACH PURCHASE, THE ENTIRE DAILY EFFORT, THE ENTIRE DELIVERY ORDER (UP TO THE DATE OF THE REPORT) AND THE PERCENTAGE OF THE ESTIMATED COST OF MATERIALS.

15. LIST ALL SAFETY VIOLATIONS OBSERVED AND CORRECTIVE ACTIONS:_____

16. LIST ANY CREDITS AND/OR ADJUSTMENTS DUE TO THE GOVERNMENT (REFERENCE INVOICE NUMBER, CONVERSATIONS, ETC.)._____

17. COMPLETE AND ATTACH THE RAPID RESPONSE DAILY WORK ORDER AT THE END OF THIS DOCUMENT AND LABEL AS APPENDIX 4. THE DAILY WORK ORDER IS REQUIRED FOR ALL COST REIMBURSABLE WORK ON-SITE AND/OR OFF-SITE INCLUDING SUBCONTRACTORS. THIS DOCUMENT DETAILS THE CONTRACTORS NEXT DAY WORK EFFORT WHICH SHALL HAVE ADVANCE APPROVAL BY THE ON-SITE CORPS REPRESENTATIVE BEFORE THE CONTRACTOR IS ENTITLED TO COST REIMBURSEMENT.

18. ADDITIONAL COMMENTS/REMARKS:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

19. CERTIFICATION: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

_____

CONTRACTORS DESIGNATED
QUALITY CONTROL REPRESENTATIVE

RAPID RESPONSE WEEKLY REPORT

Project Name _____ For Week Ending ___/___/___

Project Location _____ Report No. _____

Name _____ Title _____

Company Name & Address _____

Telephone No. ( ) _____-_____ Telefax No. ( ) _____-_____

Reporting Period: _____/_____/_____ to _____/_____/_____

Percent Field Work Completed _____% Percent Project Completed _____%

Summary of Work Completed On-Site: _____

Summary of Work Completed Off-Site: _____

RAPID RESPONSE WEEKLY REPORT CONT'D

Project Name & Location _____

For Week Ending ___/___/___

Explanation of Deviation from WorkPlan (Including Modifications and Schedule Slippages): _____

Problems Encountered: _____

Recommendations: _____

Key Personnel Changes: _____

RAPID RESPONSE WEEKLY REPORT CONT'D

Project Name & Location _____

For Week Ending ___/___/___

Work Anticipated to be Performed the Following Week: _____

Unit Price Quantities Reached to Date:

Unit Priced Item	Unit	Quantity To Date	Quantity Anticipated

Other Remarks: _____

Signature: _____

TRANSPORTATION AND DISPOSAL TRACKING FORM

1 WASTE STREAM 2 DISPOSAL FACILITY	3 - WPS a. To COE b. Number c. COE Approval d. To TSDF	4 - TSDF APPROVAL 5 - P.O.#	6 - MANIFEST a. To COE b. Number c. COE Approval	7 - PICKUP a. Scheduled b. Actual c. Acceptance	8 TSDF RECEIVED MANIFEST	9 NO. OF DAYS	10 DATE MANIFEST TO CLIENT	11 DATE EXCEPTION RPT FILED	12 - SUBTITLE D FACILITY a. Yes/No b. If Yes, Date Documentation Received
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.
	a. b. c. d.		a. b. c.	a. b. c.					a. b.

WPS = WASTE PROFILE SHEET | COE = CORPS OF ENGINEERS | TSDF = TRANSPORTATION & STORAGE DISPOSAL FACILITY | P.O. = PURCHASE ORDER

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

(Read instructions on the reverse side prior to initiating this form)

DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. (Cover only one section with each transmittal)	PROJECT TITLE AND LOCATION		

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

_____

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

APPENDIX H

KEY PERSONNEL RESUMES

Thomas P. Mathison

Professional Qualifications

Mr. Mathison coordinates the overall activities for remediation projects including establishing and maintaining project schedules, budgets, safety requirements, and quality assurance/quality control. He has over 12 years of project management experience in the construction and development industry. Because of his professional achievements, Mr. Mathison has been named an IT Project Management Associate.

Education

M.S., Civil Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania; 1982
B.S., Civil Engineering, West Virginia University, Morgantown, West Virginia; 1981

Experience and Background

1995 - Present ***Project Manager, IT Corporation, Pittsburgh, Pennsylvania.***

1994 - 1995 ***President/Project Manager, Redmac Consulting, Inc., Pittsburgh, Pennsylvania.*** Management consulting firm providing the daily oversight for golf course construction and site development projects. Responsible for preparation of the consulting cost estimates, purchasing, subcontractors, including daily management of the field crews. Most of the projects completed were located in the South Florida region. Also required to track the project costs and report profit/loss figures to client.

1992 - 1994 ***Project Manager, Environmental Services, IT Corporation, Pittsburgh, Pennsylvania.*** Responsible for management of remediation projects, including the preparation of work plans, supervision of work teams, and control of budgets and schedules. Experience included:

- Managing a fuel recovery and demolition project for Fire Training Facility No. 4 at Andrews Air Force Base in Washington, D.C. This project performed in conjunction with the U.S. Army Corps of Engineers (USACE) under IT's Rapid Response Contract.

- Construction management of a landfill cap project for G. E. Transportation Systems in Erie, Pennsylvania.

- Project manager for a drainline installation project at the Rocky Mountain Arsenal in Denver, Colorado. Work was performed utilizing Level B protective clothing due to the possible presence of chemical nerve agents. Project completed for the USACE under IT's Rapid Response Contract.

- Managing a soil excavation and thermal treatment project at Fort Lee, Virginia for the USACE. The project involves the on-site thermal treatment of approximately 3,000 cubic yards of petroleum contaminated soils.

- Manager for a project at Fort Eustis, Virginia involving the excavation and removal of jet fuel contaminated soil and the installation of a fuel recovery system. Also includes the disposal of waste oil and associated tanks. Project to be completed for the USACE under IT's Rapid Response Contract.

- Manager for a project at Fort Story, Virginia involving the removal and disposal of a fire training facility and the insitu treatment of approximately 16,000 cubic yards of petroleum contaminated soils through bioremediation. The project performed for the USACE under IT's Rapid Response Contract.

- Manager for a project for Quaker State Oil Company involving the closure of a fly ash and bauxite fines landfill in Foxburg, Pennsylvania. The project included the grading of the fly ash and bauxite fines to the proper grade, placing a hope cover system and placement of two feet of soil over the site. Also included were the associated drainage systems and revegatation required.

- Manager of the immediate response project for the USACE involving the remediation of a 7,000 gallon fuel spill in Vernal, Utah. Project includes the installation of monitoring well, production wells, and the installation of a vacuum enhanced recovery and treatment system.

- Manager for a project for Quaker State Corporation in St. Louis, Missouri involving the relocation and onsite storage of radiological contaminated soils and the excavation, transportation, and disposal of approximately 30,000 cubic yards of oil contaminated soil.

1990 - 1991 ***Project Manager, Pipe Power Utilities, Inc., Riviera Beach, Florida.*** Responsible for the daily management and operation of a $6 million per year underground utility contractor. Duties included marketing, contract negotiation, project administration, overseeing bid preparation and purchasing, direct supervision of the accounting department, office personnel, and field crews. Daily functions involved interaction with developers, utility companies, contractors, engineers, and government agencies with regard to contracts, change orders, pay requests, permits and general correspondence in order to ensure proper and efficient project completion. Additional responsibilities included overseeing insurance, workers compensation matters, payroll, taxes, budget control, and setting future goals and projections for the corporation.

1983 - ***Project Engineer, H and T Contractors, Inc., West Palm Beach, Florida.***

1990 Responsible for the project administration of a $15 million per year site development contractor whose projects included major earthwork for subdivisions, golf courses, underground utilities, and road construction. Duties included bid preparation, cost estimates, purchasing, contract negotiations, selection and coordination of sub contractors, preparation of pay requests, and field representations. Interacted with engineers, utility companies, government agencies, and developers in order to ensure proper project coordination and completion.

1983 - ***Consulting Civil Engineer, Hazen and Sawyer, P.C. Engineers, Hollywood, Florida.*** Duties included assisting in the design of water and wastewater treatment plants, sanitary landfills, and deep well injection systems. Prepared project specifications and participated in the field inspection during construction phases of these projects. Collected hazardous sludge pond samples and prepared them for shipment to be tested for compliance with E.P.A. regulations.

1981 - 1983 ***Research Assistant, Carnegie Mellon University, Pittsburgh, Pennsylvania.*** Researched long range transport of trace metals in the atmosphere. Duties included preparation, set up, and collection of ambient air sampling systems in remote areas such as Glacier national Park in Montana and on the ice cap of Greenland. Prepared samples for analysis in a sterilized clean room laboratory and tested for metals using atomic absorption spectrophotometry. The results of the Glacier National Park research were summarized and reported in thesis which partially fulfilled the requirements for the degree of Master of Science.

Summer 1980 ***Consulting Civil Engineer, Mackin Engineering Company, Pittsburgh, Pennsylvania.*** Assisted in the engineering for bridge inspections. Prepared sketches of existing bridges to be used during structural inspections.

Albert L. Meyers, Jr.

Professional Qualifications

Mr. Meyers is a Program Manager with more than 20 years of experience in the construction and remediation industries. For the last 10 years, he has been directly responsible for supervising and managing remediation projects that have involved on-site source control, on-site treatment, the use of innovative technologies, transportation and disposal, and special applications, such as asbestos and unexploded ordnance (UXO) handling. Since the fall of 1991, Mr. Meyers has served as the Program Manager for IT's Rapid Response Contract with the U.S. Army Corps of Engineers (USACE) Omaha District. During this time, he managed the execution of 32 delivery orders. Throughout the development of the Rapid Response program within IT, Mr. Meyers has been personally responsible for training the program staff members and ensuring program continuity throughout IT's offices nationwide. Because of his professional achievements, Mr. Meyers has been named an IT Project Management Associate.

Education

B.S., Chemistry, University of Dayton, Dayton, Ohio; 1974
Safety Training (per OSHA 29CFR1910.120)

Experience and Background

1995 - Present ***Program Manager, IT Corporation, Pittsburgh, Pennsylvania.*** Develops and implements remedial action response efforts for hazardous waste sites nationwide. Served as Program Manager for the USACE Omaha Rapid Response I Contract. Responsible for negotiating, receiving, approving, and implementing delivery orders; designating project managers; implementing quality control and health and safety programs; attending "Report Card Meetings"; and controlling program cost and schedule in accordance with USACE procedures.

1991 - 1995 ***Program Manager, IT Corporation, Cincinnati, Ohio.*** Developed and implemented remedial action response efforts for hazardous waste sites nationwide. Served as program manager for the USACE Omaha Rapid Response II Contract. Was single point of contact to the USACE. Responsible for negotiating, receiving, approving, and implementing delivery orders; designating project managers; implementing quality control and health and safety programs; attending "Report Card Meetings"; and controlling program cost and schedule in accordance with USACE procedures. Managed 60 delivery orders nationwide under this contract.

1984 - 1991 ***Field Supervisor/Project Manager, Remediation Group, IT Corporation, Pittsburgh, Pennsylvania.*** Developed work plans, schedules, and cost estimates and coordinates job implementation and execution of work. He managed or supervised on site the following jobs:

- Managed delivery orders on a cost-reimbursable basis under IT's Emergency Response Cleanup Services (ERCS) contract with the U.S. Environmental Protection Agency (EPA).

- On-site management of a major polychlorinated biphenyl (PCB) decontamination asbestos abatement at a naval power station in Guam. Activities include contract administration and negotiation as well as coordination of all decontamination removal, treatment, and disposal activities with the Navy and their inspectors.

- On-site management of Superfund/potentially responsible party (PRP) site in Indiana involving the cleaning/demolition of vertical and horizontal tanks ranging from 5,000 to 250,000 gallons. This included all interface between client and government, strict documentation, the scheduling of site activities, and all disposal/ treatment.

- Supervised/managed total plant decontamination of PCB in Kentucky. Cleanup involved equipment removal/replacement, slab demolition/replacement, equipment-building decontamination, excavation, and water treatment. This project had a time constraint of two weeks, which necessitated 12-hour shifts, to complete 95 percent of the work.

- Supervised PRP project in Edison, New Jersey that involved eight hundred 55-gallon drums of unknown material, 30 tank trailers full of solvents and PCB oils, and the excavation of approximately 2,000 cubic yards of soil.

- Supervised cleanup of a large state-funded PCB/chemical dump site in New Jersey. Activities included the excavation of soils, laboratory bottles, containers, categorization, and disposal (approximately 80,000 bottles total).

- Supervised/managed the removal of USTs across the United States for a major client as well as other clients. This included attaining all necessary permits, licenses, soil and product analysis, excavation, sampling, replacement of tank when necessary, backfill with approved/clean material, disposal of waste, and compliance with all federal, state, and local regulations.

- Supervised/managed the treatment and disposal of outdated or unknown chemicals and gases at a Pittsburgh university and research facility. Many of the chemicals were unknown and warranted site hazardous categorization or site treatment due to no available disposal.

- Supervised/managed various groundwater intercept and treatment activities for major chemical and petroleum clients across the United States. Activities included treatment system design, setup, and after flow rate stabilization. The systems are

self-controlled through automation, needing minor maintenance, using state-of-the-art equipment.

1982 - 1983 ***Assistant Chemist/Quality Control Inspector, Schaffner Manufacturing Company, Pittsburgh, Pennsylvania.*** Performed analyses for product development and was responsible for quality control and product development.

1980 - 1982 ***Field Supervisor/Project Manager, Enviro Haz Mat, Inc., Pittsburgh, Pennsylvania.*** Assisted in design of basic structure of business; performed job surveys, drafted proposals, and estimated costs; and supervised and coordinated the planning, execution, and cleanup of all projects within the division.

1978 - 1980 ***Recovery Technician/Team Leader/Supervisor, AMO Pollution Services, Pittsburgh, Pennsylvania.*** Involved and trained in emergency response team action; assisted in preparing proposals and safety plans; and supervised various remedial projects and emergency response actions.

1972 - 1978 ***Mosites Construction Company, Pittsburgh, Pennsylvania.*** Laborer on all types of general construction projects; truck driver and limited equipment operator; material expeditor; crew leader and site foreman.

Warren Houseman

Professional Qualifications

Mr. Houseman has over 17 years of diversified industrial hygiene and safety experience in heavy industry and hazardous waste and is responsible for industrial hygiene, occupational safety, training, workers' compensation, and medical surveillance programs for IT Project Operations. As a principal industrial hygiene investigator, he has experience in recognizing and measuring such occupational hazards as organic vapors, asbestos, lead, silica, ionizing radiation, and noise. He has also provided training programs to IT's technical field staff concerning asbestos, respiratory protection, hearing conservation, radiation survey equipment, gas testing equipment, and hazard communication. Because of his professional achievements, Mr. Houseman has been named an IT Technical Associate.

Education

M.S., Hygiene, University of Pittsburgh, Pittsburgh, Pennsylvania; 1982
B.S., Biology, California University of Pennsylvania, California, Pennsylvania; 1976
Additional Training:
8-Hour Refresher Training, IT Corporation; 1988-95
Medic First Aid/CPR; 1993
Hazardous Waste Supervisor, IT Corporation; 1992
AHERA Contractor/Supervisor Training for Asbestos Abatement, Asbestos Consulting Testing, Lincoln, Nebraska; 1990
Multimedia Standard First Aid, American Red Cross; 1988
Adult Cardiopulmonary Resuscitation, American Red Cross; 1988
40-Hour Health and Safety Training for Hazardous Waste Site Workers in accordance with 29 CFR1910.120, IT Corporation; 1987
Continuing education:
What Every Industrial Hygienist Needs to Know About Process Safety Management, AIHA, Anaheim, California; 1994
Managing Ionizing Radiation Programs for Industrial Hygienist, AIHA, Salt Lake City, Utah, 1991
Asbestos Abatement Worker Contractor/Supervisor Recertification, Center for Environmental and Occupational Training, Inc., Pittsburgh, Pennsylvania; 1991
Managing Safety: Techniques That Work for Operations Managers, E.I. duPont deNemours & Company; 1990
Introduction to the Fire and Explosion Hazards Associated with Explosive Contaminated Soils, Hercules, Incorporated, Rocket Center, West Virginia; 1988

Registrations/Certifications

Certified Industrial Hygienist: American Board of Industrial Hygiene

Experience and Background

1991 - Present ***Health and Safety Manager/Director, IT Corporation, Pittsburgh, Pennsylvania.*** Responsible for industrial hygiene, occupational safety, training, workers' compensation, and medical surveillance programs for IT Project Operations. Duties include:

- Development or approval of health and safety plans (H&S) for all major projects
- Acquisition of H&S staff
- Participation in monthly safety council and audit programs and H&S technical exchange committee
- Review of proposals for H&S cost estimates
- Assignment as temporary on-site H&S officer during employee vacations and excused leaves
- Coordination and technical support of field H&S technicians.

1987 - 1990 ***Health and Safety Coordinator, IT Corporation, Pittsburgh, Pennsylvania.*** Responsible for industrial hygiene, occupational safety, training, workers' compensation, and medical surveillance programs for the remediation division of IT. Duties included:

- Administering the industrial hygiene program for recognition, evaluation, and control of workplace health hazards.
- Supervising a comprehensive loss control program, including audits, accident investigations, employee training, and establishment of H&S requirements for projects and facilities.
- Coordinating and technical support of field H&S technicians
- Designing and implementing H&S plans for remedial investigations, decontamination, and remediation projects.
- Coordinating with H&S regulatory agencies at local, state, and federal levels.

1985 - 1987 ***Environmental Health Engineer, USS Division, USX Corporation, Lorain, Ohio.*** Responsible for the implementation and direction of the Lorain Works Industrial Hygiene Program. Experience included:

- Recognizing and measuring occupational hazards, including organic vapors, asbestos, lead, silica, ionizing radiation, and noise
- Instructing training programs concerning asbestos, respiratory protection, hearing conservation, radiation survey equipment, gas testing equipment, and hazard communication
- Achieving compliance with Occupational Safety and Health Administration (OSHA) and U.S. Nuclear Regulatory Commission (NRC) regulations
- Participating in joint union-management safety committee meetings
- Functioning as site Radiation Safety Officer (RSO) which included monthly source surveys, semiannual wipe testing, radiation dosimetry tracking and reporting, establishment of radiation areas during radiography work and emergency contact for radiation incidents
- Supervising gas rescue personnel
- Interacting with the plant safety function.

1984 - 1985 ***Industrial Hygienist, Mon Valley Works, USS Corporation, Dravosburg, Pennsylvania.*** Shared responsibility for the implementation and direction of the Industrial Hygiene Program at five facilities. Experience included:

- Evaluating collected survey data followed by written conclusions and recommendations
- Developing programs, including respiratory protection program for air purifying respirators and guidelines for the handling and removal of asbestos-bearing materials
- Evaluating employee exposure histories for occupational disease claim petitions.

1983 - 1984 ***Environmental Health Technician, Edgar Thomson Works of USS Corporation, Braddock, Pennsylvania.*** Responsible for industrial hygiene at the Edgar Thomson and Duquesne plants. Experience included:

- Participating in gas program, radiation committee, and safety program audit teams
- Collecting, evaluating, and managing Material Safety Data Sheets
- Recognizing and measuring occupational hazards.

1976 - 1983 ***Environmental Health Technician, Clairton Works, USS Corporation, Clairton, Pennsylvania.*** Conducted industrial hygiene surveys and provided written conclusions and recommendations.

Professional Affiliations

American Academy of Industrial Hygiene
American Industrial Hygiene Association (full member)

Publications

Houseman, W. C., 1982, "Development and Evaluation of Experimental Passive Dosimeters for the Collection of Formaldehyde," Master's Thesis, University of Pittsburgh, Pittsburgh, Pennsylvania.

Roger T. Clifford

Professional Qualifications

Mr. Clifford is a board certified Registered Professional Surveyor. He has 17 years of experience in surveying and civil construction with major emphasis on management and technical supervision. Projects include bridges, flood walls, highways, levees, plant work, environmental remediation, and commercial construction. He has special training in craning, safe rigging, safety and loss control for management, and OSHA safety standards. He is certified in radiological safety and gauge operation for the use of nuclear testing equipment in soil moisture and compaction analysis.

Education

Delgado Community College, New Orleans, Louisiana, majoring in Mathematics
University of New Orleans, New Orleans, Louisiana, majoring in Mathematics
Radiological Safety, Troxler, Inc.
Craning Certification, Rigging Certification, and Safety and Loss Control for Management Certification, J.B.C., Inc.
AutoCADD® Drafting, Slidell Technical Institute

Registrations/Certifications

Registered Land Surveyor: Louisiana No. 4642

Experience and Background

1992 - Present ***Operations Supervisor and Professional Surveyor, IT Corporation, Bayou Bonfouca Superfund Site, Slidell, Louisiana.*** Responsibilities include establishment of horizontal and vertical control networks, subsidence monitoring on the site and adjoining bayous, and computations, mapping, and layout of all structures and facilities. Other duties include supervision of subcontractors operations, certification of quantities for payment, and production and updating of as-built drawings. Field data for this site is obtained by using electronic total station and data collector. Field data is entered in a computer, and working drawings are then produced by using EDS engineering software working with Autocad.

1990 - 1992 ***Project Superintendent/CQC System Manager, Ronald Adams Contractors, New Orleans.*** Responsible for procurement of all necessary equipment and materials, supervision of subcontractors operations, enforcement of all safety regulations and policies, and planing and implementing of all phases of construction, with direct supervision of all crafts. The first project completed was a $3.4 million U.S. Army Corps of Engineers (ACE) levee project in Jefferson Parish, Louisiana. The last

project was a $10 million F.A.A. project requiring installation of 116,000 wick drains and $1 million cubic yards of sand at New Orleans International Airport.

1988 - 1990 ***Project Engineer, Johnson Brothers Construction.*** Routine work involved providing layout and technical supervision for excavation, piledriving, footings, columns, caps, and decking for elevated roadways and bridges. Projects completed include a $30 million contract for the east transit and approach ramps to the G.N.O. Mississippi River Bridge, and a $6 million contract for the ACE parish line floodwall in Kenner, Louisiana.

1980 - 1988 ***Chief Surveyor, Universal Land Surveyors, New Orleans, Louisiana.*** Routine responsibilities include planning and implementation of all survey work for the following types of surveys: boundary surveying, engineering design, construction layout, topographic, court surveys, environmental litigation, public lands, and control surveys.